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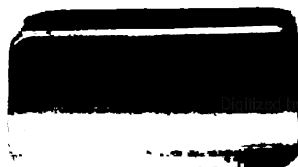
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THE
JOURNAL OF PROCEEDINGS AND ADDRESSES
OF THE
NATIONAL EDUCATIONAL ASSOCIATION,

SESSION OF THE YEAR 1882,

AT

SARATOGA.

PUBLISHED BY THE ASSOCIATION.



BOSTON:
ALFRED MUDGE & SON, PRINTERS,
No. 34 SCHOOL STREET.
1882.



NOTICE.

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THE Fifty-third Consecutive Annual Meeting of the American Institute and the Twenty-first Annual Meeting of the National Educational Association were held conjointly at Saratoga, July 11-14. During the sessions of either body, the members of the other Association were considered as invited guests, entitled to all the rights and privileges of the body in session, except the right to vote. The American Institute held its sessions on the 11th and 13th, and the National Educational Association on the 12th and 14th insts., with a joint meeting on Friday evening, the 14th inst. There have been printed 700 copies of the proceedings, and in the entire edition are bound the proceedings of the Department of Superintendence in Washington in March, 1882.

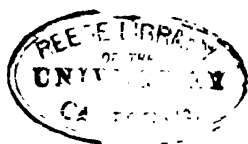
W. E. SHELDON,
Chairman of Committee on Publication.

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GENERAL ASSOCIATION.

FIRST DAY'S PROCEEDINGS.

MORNING SESSION.

THE Twenty-first Annual Meeting of the National Educational Association was opened at the Methodist Church, Saratoga, N. Y., at 9.30 A. M., Wednesday, July 12, 1882.

The President, Hon. GUSTAVUS J. ORR, of Atlanta, Ga., called the Association to order, and the exercises were opened by singing of the hymn, "Blest be the tie that binds," led by Mr. WILLIAMS, of Chicago, Ill. Prayer was offered by LEMUEL MOSS, Ph. D., president of the Indiana State University.

The President, GUSTAVUS J. ORR, gave his inaugural address as follows:—

ADDRESS.

Ladies and Gentlemen of the Convention:

The assembling of this body of educators is one of the marked events of the times. I see before me a vast throng of earnest men and women from every portion of this great country. The programme of this body alone shows a representation from nineteen States. Five of these representatives are from New England; four from the Middle States; nine from the South; and fourteen from the great Northwest. From the beginning our Association has been called National. We now, for the first time in our history, fully justify our claim to the title. We are now, indeed, national. And why should we not be? The best element in our political parties even, and, I trust, the largest, seems now inclined to look away from the past, and to forget, to a large extent, the narrowness of sectionalism. Secular organizations of every kind—philosophical, scientific, agricultural, mechanical, commercial—seem to be able to come together and stand upon common ground. The great churches of the country are fraternizing. Shall we be behind the men of other pursuits? I but utter the honest feelings of my heart when I say that I hail every worthy man and woman of the great brotherhood of American educators, whatever may be the place of his birth or residence, as an honored colaborer and a friend. I go further. I know that I have not been chosen to utter what I am about to express. I do not claim delegated authority in the matter. Yet, being a Southern man,—Southern by birth, Southern by education, Southern by life-long residence, Southern in sym-

thies and sentiments, — I know that I truly represent not simply the educators, but the great bulk of the people, of that section, when I say that they earnestly desire that by-gones shall forever hereafter be by-gones. They would say with me, were they here to-day, "Let what has been accomplished stand. The past is dead. 'Let the dead bury their dead.' We will busy ourselves with the living present and the pregnant future." I know these to be the sentiments of the best men throughout the South, and I feel sure they are heartily responded to by the good men and women of every portion of our country.

Thus much I have thought it proper to say at this time in reference to the feelings of the people among whom I dwell. I come now to say a few things in relation to the work that convenes us. The work of educators is a great work. It is great because it lies at the basis of every other kind of work. Educators give form to the material out of which all other workers are fashioned. The material out of which the agriculturists, the mechanics, the manufacturers, the merchants, the doctors, the lawyers, the statesmen, the preachers, and even the teachers themselves, are constructed is, to a large extent, just what the educators make it. The old king of Prussia understood this statement when he sought the remedy for the utter impoverishment, desolation, and ruin wrought in his kingdom by the hand of an invading army, in universal education. How many of even the best educated of our people take into their minds this thought in its length and breadth and depth and height of meaning? And if they fail fully to comprehend, when shall we be able to bring up the masses of the people, and especially in that portion of our country most interested, to its thorough comprehension?

The work before the educators of this country is especially great. To understand this statement it will be necessary to understand something of the greatness of the country. One hundred years ago the inhabited part of this country consisted of a little strip of territory along the Atlantic coast. Now the whole of our vast territory is more or less densely inhabited, from the Atlantic Ocean on the east to the Pacific on the west, and from the ice-bound regions of Alaska on the north to the semi-tropical regions bordering on the Gulf of Mexico. Then the population was 3,000,000. Now it is 50,000,000. The present population would furnish about 15,000,000 of children of school age. Do we, my fellow-educators, realize that what this vast throng of children shall be; that what shall be the yield, material and moral, of their lives; that what shall be the outcome of all this, as to the destiny of the country, will depend largely upon the manner in which we do our work? Can any man estimate the vastness of the problem to be solved by the educational workers of this country, in view not simply of what we are, but of the great future that lies out before us? The only limit to its vastness is to be found in the limit to our future territorial expansion and in the limit to the capacity of that territory when it has reached its maximum to sustain population. How may this great problem

be best worked out? To understand fully its conditions and all the principles involved in its successful solution is a task which may well challenge the best powers of the greatest intellects among us. In order to understand perfectly how to do the work, we must understand fully the material upon which we are to operate. We must have a perfect psychology. We must have what might be called a perfect philosophy of man. We must know all that is in him. We must fully understand his intellect, his sensibilities, his will, his moral nature. We must know all about the interdependence and correlations of these and all the laws that govern their action.

We must further understand all sciences, — everything comprehended under the heads of the known and even of the knowable. We must understand what class of studies will best develop this or that class of faculties, the order of the development of the faculties themselves, and the fittest mental pabulum at the different stages of development.

We must not only know the human faculties and the branches of knowledge best suited to their development, but we must know all that can be known of methods. Is this method of presenting a subject better than that? Is there, indeed, any method of presenting a given subject which is in itself the only true and natural method? Or are we so constituted that I can do better with this method and you with that? And, again, is not one method better adapted to one pupil and another to another? These questions and many others in relation to modes of work must come up for solution before we know all that must be known about methods.

Again, how best to govern a school is a question included in the educational problem that must come up for discussion and settlement. How may *men* best be governed is a question which all the knowledge and all the experience of all past ages have not enabled philosophers to settle. In the child are found all the germs of the man, and the philosophy of his proper government is no less profound than that of the proper government of men. The proper solution of the educational question will not have been reached till this whole subject of government shall have been fully explored.

But, in order to solve perfectly the educational problem, we must go beyond questions as to what we are, questions as to what must be known, questions as to what is best adapted to develop this or that class of faculties, questions as to methods, and questions as to government; we must, in addition, ascertain whose function it is to educate. Is it the business of the different churches? Is it left to the head of each particular family to provide for the training of his own offspring? Is it a work proper for associated effort on the part of private individuals? Is it the function of the State? Or is it the proper work of all these agencies, each doing what it may in its own appropriate field? How, further, if there be such fields, shall the proper limits of each be distinctly defined? If it is proper for the State to do the work in whole or in part, what shall be the character of the legislation through which the work shall be conducted? How far may the national government go, and within what limits shall the operations of the

States be confined? Shall the different States aim at oneness of system, or shall the oneness aimed at be only in the great object sought, the details in each particular case to be such as the exigencies of the situation seem to require?

How shall that most difficult of all questions — the race question — be treated?

In order to a perfect solution of the great educational problem, all the subordinate questions that have been propounded, and probably a much larger number that have not occurred to the speaker, must be asked, and a thoroughly satisfactory answer to each must be given. We shall never, however, reach such a solution. All that we can hope to do is to seek to make continual approaches toward perfection. In these efforts to move forward toward the unattainable consists, in my judgment, the proper work of bodies like this; and I know that I am not claiming too much for you, my brethren, when I say that by your labors in the past you have contributed much toward the settlement of some, at least, of the subordinate questions which I have hinted at in these opening remarks. From the names that appear upon the programme before me, I feel sure that the present occasion will not differ, in this respect, from those that have gone before. I had hoped, in this opening address, to be able to give my own thoughts on one of the high themes to which I have referred. I have been so much occupied in calling out other laborers and in making the general arrangements for this occasion that I have found it impossible to do what I would gladly have done in this matter. The work of perfecting these arrangements has itself cost me the writing of no less than one hundred and seventy-two letters, covering, as my letter-book shows, two hundred and fifty pages. This you must accept as my humble contribution to the entertainment of this occasion. I now conclude by most cordially inviting you to the enjoyment of the rich feast which, I am sure, is in store for you.

The first regular paper was given by ELI T. TAPPAN, LL. D., Kenyon College, Gambier, O. Topic: "The University; its Place and Work in the American System of Education."

This address was followed by a discussion, participated in by J. A. COOPER of Pennsylvania, and I. W. ANDREWS of Marietta, Ohio; Hon. SAMUEL BARNETT of Washington, Ga.; JOHN HANCOCK of Dayton; and President FOLWELL, who said the old college course so general thirty years ago was gone, and all the colleges are adopting elective studies; the great want of the present day is to improve the high schools and seminaries; when they are improved a part of the colleges will develop into the university.

J. H. SMART, of Indiana, advocated an increase of the appropriation by Congress for the Bureau of Education at Washington, D. C.

After a brief recess, the Association listened to an address given by E. T. JEFFERS, president of Westminster College, Pa. Topic: "Self-Consciousness in Education."

The paper was discussed by Prof. G. STANLEY HALL of Massachusetts ; Dr. HOOSE of New York ; President BUCKHAM of Vermont ; Prof. RICHARDS of Washington ; and Dr. WM. T. HARRIS of Massachusetts, the latter speaking of the probable ill effects of too intense self-consciousness.

COMMITTEES.

President ORR nominated the following committees, and the persons named were unanimously chosen : —

On Nominations. — Maine, C. C. Rounds ; Massachusetts, D. B. Hagar ; Rhode Island, W. A. Mowry ; Connecticut, D. N. Camp ; New York, N. A. Calkins ; New Jersey, W. N. Barringer ; Pennsylvania, H. S. Jones ; Indiana, J. H. Smart (*chairman*) ; Ohio, John Hancock ; Illinois, John P. Slade ; Minnesota, W. W. Folwell ; Iowa, J. L. Pickard ; Kansas, H. S. Speer ; Missouri, C. W. Woodward ; Virginia, W. F. Fox ; South Carolina, J. H. Carlisle ; Georgia, J. W. Glenn ; Alabama, Miss N. C. Gibbs ; Tennessee, H. D. Wyatt ; Kentucky, W. H. Bartholomew ; District of Columbia, Z. Richards.

On Resolutions. — New York, N. A. Calkins ; Ohio, J. B. Peaslee ; Massachusetts, A. P. Marble ; Pennsylvania, E. A. Singer ; Georgia, W. B. Bonnell ; Indiana, L. S. Thompson ; District of Columbia, S. C. Hitz.

On Necrology. — District of Columbia, Zalmon Richards ; Connecticut, D. N. Camp ; Alabama, Miss Julia S. Tutweiler ; Illinois, J. P. Slade ; New York, Mr. Ellis.

AFTERNOON SESSION.

Hon. J. W. PATTERSON, Superintendent of Public Instruction of New Hampshire, offered the following resolution : —

Resolved, That it is the opinion of this Association that there should be a liberal appropriation from the national treasury for the support of schools in the several States on the basis of illiteracy.

Prof. PATTERSON eloquently urged the importance of national aid, and said that 4,000,000 slaves have been raised from servitude to complete citizenship, and more than eighty per cent of them are illiterate. The government should help instruct them, as the States are not able to do so. Illiterate immigrants are pouring in upon us. It is the duty of every Christian and patriot to educate these masses to appreciate our system of government. Europe discovered in the Franco-German war that it was the gymnasium and university, and not simply the drill, that conquered. As a result of this, England is pouring out her money to raise the masses of her common people. From Patent Office reports it has been shown that six sevenths of the patents come from States which have common-school systems. The school-houses of the country underlie everything valuable in our land.

Mr. DANIELS, of Virginia, showed the wretched condition of education in his State. The Macedonian cry of the South is, "Come over and help us."

Prof. PAINTER, of Nashville, Tenn., contended that the South was doing all in its power to promote the education of her people, but she needs assistance.

Supt. HANCOCK, of Ohio, said that Congress should understand that the great body of educators is in earnest on this subject. If Congress knows that public opinion is in favor of this movement, it will take the necessary action. While we are deliberating, thousands are dying in ignorance.

A rising vote was taken on the question, and a unanimous vote in favor was the result. It was resolved that copies of the resolution be printed and sent to all members of Congress, at the beginning of the next session, by the Secretary of the Association.

In accordance with the above vote, the Secretary sent to each member of the Forty-seventh Congress the following :—

BOSTON, Dec. 6, 1882.

MY DEAR SIR, — At the twenty-first annual meeting of the National Educational Association, held at Saratoga Springs, July 12, 1882, the following resolution was unanimously adopted by a rising vote :—

“*Resolved*, That, in the opinion of this Association, it is the duty of the Congress of the United States to make a liberal appropriation from the national treasury for the support of schools in the States, on the basis of illiteracy.”

The above resolution was adopted, without a dissenting vote, by nearly one thousand educators, representing more than thirty States. It was ordered that a copy of this resolution be sent by the Secretary of the Association to each member of Congress.

WM. E. SHELDON,
Sec'y of the Nat. Ed. Association.

JOINT SESSION OF NATIONAL EDUCATIONAL ASSOCIATION AND AMERICAN INSTITUTE OF INSTRUCTION.

A joint session of the American Institute of Instruction and the National Educational Association was held, and it was further voted that the following communication, signed by the presidents of the two Associations, be sent to the President of the Senate, to the Speaker of the House of Representatives, and to the chairmen of the Committees on Appropriations of the two houses :—

Hon. DAVID DAVIS, *President Senate* ;
Gen. KEIFER, *Speaker House* ;
Chairman Senate Committee on Appropriations ;
Chairman House Committee on Appropriations,
Washington, D. C.

SARATOGA SPRINGS, July 12, 1882.

At a joint meeting of the American Institute of Instruction and National

Educational Association, held this day, the following resolution was unanimously adopted by a rising vote :—

“Resolved, That the following communication, signed by the president of the two Associations, be sent to the President of the Senate, to the Speaker of the House of Representatives, and to the chairman of the Committees on Appropriations of both branches of Congress.”

The National Educational Association and the American Institute of Instruction, now in joint session at Saratoga Springs, strongly commend to the care of Congress the Bureau of Education, and respectfully urge the importance of an appropriation not less in amount than that last granted.

WILLIAM A. MOWRY,
Pres't Amer. Inst. of Instruction.
GUSTAVUS J. ORR,
Pres't Nat. Ed. Association.

The joint meeting having been dissolved, the National Association resumed its session, and Prof. J. W. CHURCHILL gave some readings, the first “The Graveyard Scene” from Shakespeare’s “Hamlet,” and second from W. D. Howells’s “The Pilot’s Story,” a poem.

A paper was read by Hon. JAMES P. SLADE, State Superintendent of Public Instruction, Springfield, Ill. Topic : “Country Schools.”

The following communication was read by the Secretary :—

“This is to certify that A. J. Morrison is the representative of the Teachers’ Institute of the city and county of Philadelphia to the National Educational Association for the year 1882.

“D. W. BARTINE, *President.*
D. L. CORDERY, *Secretary.*”

EVENING SESSION.

The Association met at 8 P. M., President ORR in the chair.

Hon. SAMUEL BARNETT, Washington, Ga., gave an address. Topic : “The Foundation Principle of Education by the State.”

The address was followed by very entertaining readings by Prof. J. W. CHURCHILL, Professor of Elocution in the Theological Seminary, Andover, Mass.

Adjourned to Friday, July 14, 9-30 A. M.

SPECIAL SESSION.

A special session of the National Educational Association was held on Thursday, at 12.45 P. M., President ORR in the chair.

Hon. J. M. SMART, of Indiana, chairman of the Committee on Nominations, made the following report of officers for the year 1882-83 :—

<i>President</i>	Eli T. Tappan, Gambier, Ohio.
<i>Vice-Presidents</i>	John W. Dickinson, Massachusetts.
	Samuel Barnett, Georgia.
	John Hancock, Ohio.
	W. W. Folwell, Minnesota.
	M. A. Newell, Maryland.
	J. H. Carlisle, South Carolina.
	Miss Julia S. Tutweiler, Alabama.
	H. J. Pierce, New Jersey.
	J. H. Vincent, New York.
	A. P. Stone, Massachusetts.
	E. E. White, Indiana.
	F. Louis Soldan, Missouri.
<i>Secretary</i>	William E. Sheldon, Boston, Mass.
<i>Treasurer</i>	N. A. Calkins, New York.
<i>Counsellors at Large</i> ...	Hon. John Eaton, District of Columbia.
	Gustavus J. Orr, Georgia.
	Wm. A. Mowry, Rhode Island.
<i>Counsellors</i>	C. C. Rounds, Maine.
	J. W. Patterson, New Hampshire.
	J. P. Seaver, Massachusetts.
	S. S. Greene, Rhode Island.
	David N. Camp, Connecticut.
	Thos. J. Morgan, New York.
	W. N. Barringer, New Jersey.
	E. T. Jeffers, Pennsylvania.
	Z. Richards, District of Columbia.
	R. W. Stevenson, Ohio.
	H. C. Speer, Kansas.
	J. L. Pickard, Iowa.
	W. W. Grier, South Carolina.
	J. W. Glenn, Georgia.
	J. Fairbanks, Missouri.
	H. D. Wyatt, Tennessee.
	Miss N. C. Gibbs, Alabama.
	J. D. Pickett, Kentucky.
	Geo. P. Brown, Indiana.
	J. L. M. Curry, Virginia.
	Jas. MacAllister, Wisconsin.
	Edwin C. Hewett, Illinois.

SECOND DAY'S PROCEEDINGS.

According to adjournment, the National Educational Association met at the Methodist Church on Friday, July 14, at 9.30 A. M.

Prayer was offered by Rev. E. T. JEFFERS, LL. D., President of Westminster College, Pa.

The minutes of the Secretary were ordered approved by the Committee on Publication.

THE NATIONAL COUNCIL OF EDUCATION.

The first exercise was the Report of the President of The National Council of Education to the Association, which was made by T. W. BICKNELL, LL. D., of Boston, Mass.

The following is an abstract of his report, giving its origin and objects:—

REPORT.

There has long been a growing conviction among the foremost teachers of the country, that the great annual gatherings of educators could not be relied on for definite conclusions, or consistent and weighty declarations, on any division of the broad field of instruction. The great associations now organized, State gatherings, institutes, and summer schools, are valuable for training, for instruction in theories and methods, and for social purposes; but there is little opportunity for calm deliberation and sharp criticism on the philosophic side of educational work. Up to this time our American colleges and universities have done but little to teach or illustrate pedagogic science, and our normal schools have been left to do a good work almost alone. It was proposed to form a council, representative, deliberative, advisory, whose office it should be to harmonize conflicting views and opinions so far as possible, or at least to report how far rival methods are complementary and not destructive of each other; to state differences with such clearness that they may be made to define the boundaries of all well-established truth; to translate the language and terminology of different individuals and schools, so that a common language may be deduced therefrom; and to announce to the public from time to time such conclusions as may be arrived at that may be valuable to the public, both school and general.

The necessity for such a council arises: (1) from the great variety of conflicting views and methods on education among educators; (2) from the want of clearly defined views on the part of an important portion of the press of the country; (3) from the varied conditions under which the educational problems are being wrought out in the several States; (4) from the differing educational status of the States which have had long-established free schools, and those where free schools are a new institution; (5) from the deep interest everywhere manifested in the study of the history and philosophy of education; and (6) from the influence such a body of men will have in giving to the country well-grounded conclusions, thereby establishing certain statutes of limitation for the pedagogic fraternity, and helping to define the boundaries between the known and well founded, and the tentative and empirical.

In August, 1879, there appeared in the *Journal of Education* an article setting forth some of the advantages that might arise to the cause of education in America by the formation of an association composed of our best

thinkers, who should hold stated meetings to consider the more important educational questions, and to make public any conclusions which should be reached. The article attracted wide attention, and numerous indorsements of the plan were read by the speaker. To follow up the discussion of this subject, Hon. T. W. Bicknell was invited by President Newell, of Maryland, to read a paper before an association in Washington, D. C., in February, 1880, on the "Proposed National Council of Education." In that paper were shown some of the reasons for the organization of such a council, a plan of work, and some of the results expected. A circular was also sent to persons of important educational positions, asking their views as to organization, membership, etc. A great variety of opinions was received, all of which indorsed the general plan of the organization as a deliberative body holding advisory relations to the educational work of the country. From these recommendations a committee of ten, appointed in Washington, proceeded to form a plan of organization, which was presented to the National Association at Chautauqua in July, 1880.

After a full discussion, the features of the Council were adopted as follow : Its object is to consider educational questions of general interest and public importance, and to formulate such conclusions as may be reached. It is composed of fifty-one members, elected from the National Association, representing all departments of school and college work. It is subdivided into thirteen committees, of five members each. The committees study topics by themselves and present their conclusions to the Council at the annual meeting, which is held in connection with the National Association. After a thorough discussion in the Council, and after such revision as the most careful criticism calls for, it is the purpose of the Council to publish its conclusions, showing not only the result of its deliberations, but the grounds therefor, with such dissentient opinions as may be expressed. Such reports coming to the public will have an authority of their own, which must have great weight in deciding important local issues, and in directing public opinion to a more intelligent action. A national council will be an example in itself to all students of pedagogics, stimulating honest inquiry in the true educational spirit. Already Maine, Vermont, Connecticut, Illinois, and several other States have established this form of educational work with success, and educators in other States have the matter under consideration. Cities, counties, and towns may establish smaller councils, whose work may be essentially in the same line of investigation and determination. The teachers of Providence have already formed a Barnard Club, for the deliberative discussion of topics bearing upon the local and general needs of teachers and schools; and this method of work promises to spread over the whole country, under one name or another. The Council has held two meetings ; the first at Atlanta, Ga., in July, 1881, and the second at Saratoga. The speaker, after giving abstracts of work done, fully showing the value of this Council, said in conclusion : If this Council can learn to put away every pedagogic conceit, to rise above contempt for popular institutions, and to

bring itself into hearty sympathy with the masses of our countrymen, it will gain the public ear, win public confidence, and obtain all the influence it deserves as a representative of the unfolding life of the new republic.

W. A. MOWRY, President of the American Institute of Instruction, explained the work of the Council and heartily commended the report of Mr. Bicknell, which was adopted and ordered to be incorporated into the Proceedings of the Association.

The second exercise of the day was a paper by W. W. FOLWELL, LL. D., President of the University of Minnesota, Minneapolis, Minn. Topic: "Secularization of Education."

After a brief recess, J. H. CARLISLE, LL. D., President of Wofford College, Spartanburg, S. C., gave a paper. Topic: "The Prize System as an Incentive to College Students."

The paper was discussed by Rev. LEMUEL MOSS, D. D., President of the Indiana State University, Bloomington, Ind.

The last paper of the day was given by Prof. MOSES TRUE BROWN, of Tufts College, Somerville, Mass. Topic: "The Delsarte System of Expression."

REPORTS OF COMMITTEES.

The several committees made reports as follows: —

NECROLOGY.

Your Committee on Necrology would respectfully report that, in taking a record of the deaths of the members of this Association, they have met with some difficulty in securing an accurate list. As the membership embraces a great extent of our country, it is not an easy matter to find out exactly who have deceased since our last report.

We have first to mention the name of W. D. Henkle, one of our earliest members, who died Nov. 22, 1881. He became a member at the first annual meeting at Cincinnati, and was a constant and ardent friend and supporter of the Association until death. He had served as our permanent secretary from 1876 to the day of his death, — over six years. No man has done better or greater service for this Association. Your committee will leave further eulogy upon our departed associate to those of his friends who are present, by simply saying, "Well done, good and faithful servant."

We have next to mention the decease of Mr. S. H. White, another early member, who served as secretary during the years 1866, 1872, and 1873, and as one of our presidents in 1875. Mr. White's labors for the benefit of this Association have always received its hearty approval, and deserve an honorable mention on this occasion.

We are not informed if other persons who have been members have died since our last report. If any members of this Association know of the death of any other members, the committee earnestly desire to be informed, and receive a full account of all facts.

Z. RICHARDS, *Chairman.*

Remarks on these resolutions were made by Mr. SHELDON, Dr. WHITE, and President ORR.

DR. W. D. HENKLE.

At a memorial service of W. D. Henkle, LL. D., held by the Ohio State Teachers' Association at Niagara Falls, an address was made by Prof. W. H. VENABLE, of Cincinnati, who detailed the origin, education, and eminent services of Mr. Henkle in the work of education.

The following is a brief digest of Mr. Venable's paper : —

W. Downs Henkle was fortunate in his ancestry, and, going back six generations, we find him the descendant of a noble stock. Mr. Henkle was born in comparative poverty, his father being a preacher of the itinerant class. He was amiable, faithful, and conscientious in his boyhood. He had special aptitude early for numbers ; his memory was excellent ; he was fond of working out puzzles ; he began the practice early of making public addresses. He put his first wages into a bonnet for his revered mother, whom he dearly loved. She was a lady of unusual mental power, and from her he inherited his noble nature. He was a natural teacher, and showed his tact in aiding his younger sisters to learn. He loved books tenderly. He began early in life to collect books. He had his first schooling at Springfield, Ohio, which was not in all respects satisfactory to his mind. He soon learned to depend upon his own efforts, rather than to the narrow and routine style of work done then in the schools. He began to find out that books would give him breadth and power, and to these he went with zeal, and found mental strength and power in the thoughts of the leading minds of his day. He taught his first school in 1845-46, and continued his studies at the same time. From the high school he went to Wittenberg College, where he stood first in rank. He then went to Urbana, where he began the study of medicine while teaching.

At the age of twenty, in 1848, he began work as an institute instructor, and taught many schools in different places. He gave special attention to mathematics, but his devotion to this subject did not prevent his continuing his other duties. He made able reports on phonetics. He was an indefatigable worker, and was the most successful manager of institutes. He was one of the originators of the Indiana Teachers' Association while he was superintendent of schools of Richmond, Ind. He issued a university algebra, which demanded the most exacting study. He loved keen and bright scholars, but had not the patience to inspire the dull and sluggish minds. He was the diligent and exhaustive reader of all kinds of abstruse books. He luxuriated in the *Quarterly Reviews*. No book was dry to him. He read the vast encyclopædias almost entirely. In 1862 he was nominated as school commissioner, but was defeated, as was the whole ticket, but was subsequently appointed by the governor to that office. At the end of his term he went to Salem as superintendant of schools, where he died at the age of fifty-three, in the prime of his noble life.

We do not praise him. There was but one Henkle in Ohio. He was deeply loved and admired. Six years secretary and treasurer of the National Educational Association, he made a noble record in that position. We loved him for his humanity. He was broadly educated ; he spoke in five languages and read in nine. He made minute investigation in many departments, and was an authority on many questions, especially in grammar. His curious interest in facts did not prevent him from being a practical man. He knew the duties of life and performed them well. Undeviating honesty in all his business affairs guided him in all things. He advised teachers to hold fast to things that are correct in theory and method, even though it was old. His fundamental philosophy was that knowledge of methods was the key to good work in education. He had a keen sense of wit and humor. He was entirely without affectation, but had many eccentricities. He had no vices ; was temperate in all things ; was conservative in thought and feeling, but not in any sense a bigot. Socially, he was the most delightful of men. He was a self-made scholar, a serene Christian gentleman. He loved his home, and his wife and daughter were his angels on earth. His life was consecrated to books, and his library was a sanctuary in which he spent all of his hours not engaged in active good work outside.

Dr. JOHN HANCOCK, of Dayton, followed Mr. VENABLE, and bore testimony to the modesty and unselfish character of his life. He envied no man, he coveted no honors for himself. He did his part nobly in all positions in which he was placed. Leaving behind him all petty ambitions, he left the world without an enemy. His epitaph should be, "Henkle, the Unselfish." He was always ready to tender his hand to help others forward. He was the friend of young teachers, and helped them heartily and wisely.

W. E. SHELDON, editor of the *Primary Teacher*, bore testimony to the high regard in which the life and work of Mr. Henkle was held in all parts of the country. He said he was one of the great workers of the age in connection with the National Educational Association, and was loved by educators all over the country. He had been his friend for more than twenty years, and he knew no one more simple, true, and earnest than W. D. Henkle in educational work.

RESOLUTIONS.

Chairman N. A. CALKINS, for the committee, presented the following resolutions :—

Resolved, That our thanks are due and are hereby tendered to the president of the village, Robert F. Milligan, and to the president of the Board of Education of Saratoga Springs, John Foley, Esq., for the appropriate words of welcome tendered to the Association in behalf of the citizens of this delightful village ; to the Methodist Episcopal Society for the use of their commodious house, in which the meetings have been held ; and to the proprietors of Congress Hall, and to the many other hotels and excellent board-

ing-houses that have contributed to our comforts by ample provisions for our wants ; and to Levi S. Packard and others, for untiring efforts and attention to details in matters of local arrangements.

Resolved, That the thanks of this Association are eminently due, and they are hereby cordially extended, to our President, Gustavus J. Orr, for his faithful, continued, and successful efforts to promote the best interests of the Association, and for the very kind and impartial manner in which he has presided over its deliberations ; and to the Secretary, W. E. Sheldon, and the Treasurer, H. S. Tarbell, and the Assistant Treasurer, L. S. Thompson, for their earnest attention to the business interests of the Association. and for the prompt and efficient discharge of duties pertaining to their respective positions.

Resolved, That this Association is under great obligations to the several members who, at expense of time and labor, have prepared for the consideration of this convention excellent papers relating to almost every department and interest of our system of elementary and advanced education.

The resolutions were unanimously passed by the Association.

ELECTION OF OFFICERS.

The following list of officers nominated by the Committee on Nominations was unanimously elected : —

<i>President</i>	Eli T. Tappan, Gambier, Ohio.
<i>Vice-Presidents</i>	John W. Dickinson, Massachusetts.
	Samuel Barnett, Georgia.
	John Hancock, Ohio.
	W. W. Folwell, Minnesota.
	M. A. Newell, Maryland.
	J. H. Carlisle, South Carolina.
	Miss Julia S. Tutweiler, Alabama.
	H. J. Pierce, New Jersey.
	J. H. Vincent, New York.
	A. P. Stone, Massachusetts.
	E. E. White, Indiana.
	F. Louis Soldan, Missouri.
<i>Secretary</i>	William E. Sheldon, Boston, Mass.
<i>Treasurer</i>	N. A. Calkins, New York.
<i>Counsellors at Large</i> ..	Hon. John Eaton, District of Columbia.
	Gustavus J. Orr, Georgia.
	Wm. A. Mowry, Rhode Island
<i>Counsellors</i>	C. C. Rounds, Maine.
	J. W. Patterson, New Hampshire.
	J. P. Seaver, Massachusetts.
	S. S. Greene, Rhode Island.
	David N. Camp, Connecticut.
	Thos. J. Morgan, New York.
	W. N. Barringer, New Jersey.
	E. T. Jeffers, Pennsylvania.
	Z. Richards, District of Columbia.

Counsellors R. W. Stevenson, Ohio.
 H. C. Speer, Kansas.
 J. L. Pickard, Iowa.
 W. W. Grier, South Carolina.
 J. W. Glenn, Georgia.
 J. Fairbanks, Missouri.
 H. D. Wyatt, Tennessee.
 Miss N. C. Gibbs, Alabama.
 J. D. Pickett, Kentucky.
 Geo. P. Brown, Indiana.
 J. L. M. Curry, Virginia.
 Jas. MacAllister, Wisconsin.
 Edwin C. Hewett, Illinois.

CLOSING SESSION OF THE GENERAL ASSOCIATION.

Joint meeting with the American Institute of Instruction. Presidents ORR and MOWRY alternately presided.

Readings were given by Prof. J. W. CHURCHILL of Andover, Mass., and the remainder of the evening was devoted to five-minute addresses by educators from the several States represented. Among the speakers were Hon. J. W. PATTERSON, Superintendent of Public Instruction, New Hampshire ; J. H. CARLISLE, President of Wofford's College, South Carolina ; Mr. HITZ, of Washington, Ex-Consul-General of Switzerland ; C. C. COFFIN of Massachusetts ; Hon. NEIL GILMOUR of New York ; HENRY BARNARD, LL. D., of Connecticut ; President TAPPAN, of Kenyon College, Ohio ; G. A. WALTON, of the Massachusetts Board of Education ; and others.

TELEGRAM FROM CALIFORNIA.

The following telegram was read and cheered by the Association, and the President was requested to send an appropriate response : —

SACRAMENTO, CAL., July 14, 1882.

To the Presiding Officer of the National Educational Association :

California to-night gives you hearty greeting, fraternal salutations, encouragement, and good cheer. We know that not in our marvellous wealth of soil, climate, and scenery of orchard, vineyard, and grain-field, of mines of gold and silver, nor in the brightness of our skies, but in the wide-open daylight of universal intelligence lies our hope of permanent prosperity, — indeed our very safety as a self-governing people, — and we are acting on our faith. Remember California to-night.

FRED. M. CAMPBELL,
Superintendent of Public Instruction, California.

After singing a parting hymn, the Association adjourned.

W. E. SHELDON, *Secretary.*

JOURNAL OF PROCEEDINGS OF DEPARTMENTS.

DEPARTMENT OF HIGHER INSTRUCTION.

THE Department met on Friday afternoon, July 14, in the lecture-room of the Methodist Church, Saratoga. In the absence of the President, Dr. I. W. ANDREWS, President of Marietta College, the chair was taken by Dr. L. MOSS, President of the Indiana University.

The annual election of officers for the ensuing year was made as follows:—

President. — W. W. Folwell, University of Minnesota.

Secretary. — Prof. J. H. Wright, Hanover, N. H.

Member of Council. — A. L. Chapin of Wisconsin.

On motion of Dr. E. T. TAPPAN, of Kenyon College, seconded by President MOSS, Dr. A. L. CHAPIN, President of Beloit College, was elected representative of the Department in the National Council of Education.

Prof. J. H. WRIGHT, of Dartmouth College, then read an address on "The Place of Original Research in a College Education."

The address and topics suggested by it were then discussed by President MOSS, President FOLWELL, Dr. ROBERTS, of Dayton, Ohio; President E. T. JEFFERS, of Westminster College; President JAMES MARVIN, of the University of Kansas; Hon. SAMUEL BARNETT, of Washington, Ga.; Prof. O. H. STAFFORD, of Williams College; and others.

Prof. JOHN W. GLENN, of Jefferson, Ga., read an address on "Man the Machine, or Man the Inventor; Which?"

Prof. Glenn's address and suggested topics were discussed by Prof. C. M. WOODWARD, of Washington University, Dr. ROBERTS, President FOLWELL, Hon. SAMUEL BARNETT, and others.

After a brief address by the chairman, President MOSS, the Department adjourned *sine die*.

J. H. WRIGHT, *Secretary*.

DEPARTMENT OF SUPERINTENDENCE.

This Department, which holds its regular annual meeting at Washington, D. C., each year, held only a brief meeting at Saratoga, the principal business of which was the election of officers and a member of the National Council of Education (for six years from date), in place of J. Ormond

Wilson, whose term of office expired with this meeting. A ballot by the superintendents resulted as follows:—

President.—N. A. Calkins of New York.

Vice-President.—H. S. Tarbell of Indianapolis.

Secretary.—Henry S. Jones of Erie, Penn.

Member of Council.—Henry S. Jones of Pennsylvania.

The Department adjourned.

DEPARTMENT OF INDUSTRIAL EDUCATION.

The Department was called to order by Dr. E. E. WHITE, of Purdue University, Indiana.

In the absence of the President and Vice-President, it was moved and seconded that President FOLWELL take the chair *pro tem*.

Moved and seconded that Mr. HITZ act as secretary *pro tem*. in absence of the Secretary.

Mr. E. E. WHITE moved that a committee of three be appointed by the chair to nominate officers, including a member of the Council of Education.

The reading of papers was proceeded with in order.

Dr. GEORGE T. FAIRCHILD, President Kansas State Agricultural College, Manhattan, Kan., read a paper. Topic: "Dexterity before Skill."

A very animated discussion followed this paper.

Mr. DANIELS, of Virginia, claimed that the general training of men and women necessary for ordinary life in this age was wanting, and specially advocated the system employed at the Industrial Department of the Hampton School, Va., where the girls and boys who were engaged in manual labor showed an increased activity in mental studies. He maintained that in all schools teachers should be employed who could also give instruction in manual training.

Dr. E. E. WHITE heartily indorsed the sentiments of the paper.

MANUAL TRAINING SCHOOLS.

A very able paper on "The Function of a Manual Training School" was next presented by Prof. C. M. WOODWARD, of Washington University, St. Louis.

Prof. E. L. YOUNG, of the *Popular Science Monthly*, discussed the paper, and made especially prominent the need of this form of education for boys whose tastes and inclinations do not lead them to purely intellectual pursuits. He instanced the case of a boy who had not succeeded well in the ordinary school curriculum, but who was foremost in a technical school,

where the branches of study accorded with his personal preferences, and where nicety and exactness of manipulation were required.

Mr. L. H. MARVEL, of Boston, gave some account of the class in carpentry in Gloucester, Mass., and presented a concise statement of the work of the school, which attracted attention and awakened interest, as it was the only account of work actually performed in a public school by one who had directed such work.

The next paper was by President E. E. WHITE, of Purdue University, Lafayette, Ind. Topic: "The National Industrial College, — Its History, Work, and Ethics."

Prof. S. R. THOMPSON, of Lincoln, Neb., gave a report of the progress of industrial education during the year 1881-82. This report will be found, with the addresses in full, under the head of "Addresses of the Industrial Department" in this volume.

OFFICERS ELECTED.

For the ensuing year, the following officers were elected : —

President. — C. M. Woodward of St. Louis.

Vice-President. — W. W. Folwell of Minnesota.

Secretary. — S. R. Thompson of Nebraska.

Member of the Council. — C. O. Thompson of Indiana.

DEPARTMENT OF NORMAL SCHOOLS.

This Department met in the lecture-room of the M. E. Church. In the absence of the Secretary, Prof. George P. Beard of Pennsylvania was chosen secretary *pro tem*.

The following Committee on Organization for next year was appointed by the chair: Profs. Bloss of Indiana, Conant of Vermont, and Hoose of New York.

The following committee was appointed to suggest subjects for consideration at next meeting: Profs. Morgan of New York, Edson of Vermont, and Ware of Georgia.

The President, C. C. ROUNDS, then delivered a brief address on "Needed Changes in the Organization and Work of the Normal School," in order to make it more efficient in developing in the public mind a conviction of the necessity for special pedagogical training, and to supply it with the means for giving such training in pedagogical science and art as the present and prospective condition of American education demands.

In accordance with the recommendations of the President, a committee was appointed to report at the next meeting on the proper organization and equipment of a normal school.

NORMAL SCHOOLS.

The address of the President was followed by the reading of a paper by Hon. D. L. KIEHLE, State Superintendent of Minnesota, on "The True Place of the Normal School in the Educational System."

This paper was discussed by the following gentlemen: H. C. SPEER of Kansas, G. P. BEARD of Pennsylvania, W. T. HARRIS of Massachusetts, and others.

Prof. MORGAN, of New York, claimed it is impossible to make the normal school simply an agency to supply the country with teachers, illustrating by West Point Military Academy as furnishing men competent for leaders and organizers, not trained non-commissioned officers and privates.

Prof. BEARD, of Pennsylvania, followed with brief remarks, claiming that the normal school is the vital centre of any system, that its work warrants its existence, and we must deal with facts and not fancies.

Superintendent HANCOCK, of Ohio, followed with remarks defining the province of the normal school.

Mr. KELLOGG, of New York, spoke of the system of normal schools in New York State. He suggested that there be a normal-school congress, to recommend a common standard of admission to normal schools.

Mr. SPEER, State Superintendent of Kansas, discussed the general subject, emphasizing the importance of giving professional instructors to the mass of country common schools.

The discussion on "The Place of Normal Schools in a System of Education" being resumed, Dr. HOOSE claimed that the normal schools are centres of reformatory influences. They should have an organic relation to the public-school system.

Mr. BLOSS, State Superintendent of Indiana, and a trustee of the State Normal School, spoke of the normal-school work in Indiana.

Prof. SANFORD, of New York, spoke of professional instruction as the characteristic work of the normal school. He deprecated the crowd of incompetents in this State, who crowd out normal graduates and other competent teachers.

Prof. COOPER, of Pennsylvania, spoke of the impracticability of normal instruction if the standard of admission is made graduation from the college.

Prof. BROWN, of Indiana, said the subject taught has a fact side and a science side. The normal school teaches the science side, the common school the fact side. All instruction of subjects in the normal school is, or should be, professional.

Prof. MILNE, of New York, differed from others in his conception of professional work.

Prof. HEWETT, of Illinois, thought the normal school was beset with difficulties. It must do the best it can under the circumstances. The normal schools have done a work in the country of which he is proud. There is a kind of work in the teaching the subject-matter as taught in the nor-

mal schools that prepares the teacher to teach, — call it what you please, professional, academic, or something else. The great difficulty is in the community. The people do not really know a good teacher. We need to educate public sentiment to appreciate right teaching.

Mr. KIEHLE closed the discussion.

TEACHERS' INSTITUTES.

The subject of "Teachers' Institutes in the South" was then discussed, in the absence of Prof. Edward S. Joynes of South Carolina, first, by Dr. W. T. HARRIS of Concord, Mass. He spoke of his observations in institutes in the South, commending enthusiastically the character and ability of the pupils and teachers in these institutes, and expressing high hopes of the good results of the institute work upon education in the South.

The President of the department followed with remarks founded upon his observations of institute work in the South, speaking especially of the earnestness of the pupils and the high character and ability of the instructors, and saying that in this work the North had something to learn from the South, and that similar institutes held throughout the North would prove of immense benefit.

Mr. GLENN, of Georgia, spoke of institutes in that State. No agency has done so much for education in Georgia as the institute. He also spoke of institute work in other Southern States.

BUSINESS.

The Department balloted for and elected, as member of the National Council of Education for six years, Miss Matilda S. Cooper of Oswego, N. Y.

The committee on programme for next year's meeting recommended the preparation of a paper, and the appointment of standing committees as follows: *Paper*, "The True Organization and Equipment of Normal Schools." *Committees*: 1. Professional Instruction; 2. Academic Instruction; 3. The Training School; 4. The Kindergarten; 5. Teachers' Institutes.

The committees are to be appointed by the President, and such of these will report at the next meeting, in full or in part, as may be arranged for in the programme of the same.

The Committee on Organization reported the officers for the next year as follows: —

OFFICERS.

The officers elected for the ensuing year were: —

President — E. A. Ware of Georgia.

Vice-President. — E. C. Hewett of Illinois.

Secretary. — G. P. Beard of Pennsylvania.

Member of the Council. — Miss M. S. Cooper of New York.

It was voted that the Executive Committee be instructed to arrange that the meeting of the Normal Department be called one or two days before the meeting of the General Association.

DEPARTMENT OF ELEMENTARY SCHOOLS.

FRIDAY AFTERNOON.

This Department was called to order at 3 P. M. by President JOHN M. BLOSS of Indiana.

In the absence of the Secretary, S. G. Brinkley, of Georgia, was elected secretary *pro tem*.

On motion of J. P. SLADE, of Illinois, the following committee was appointed to select a member of the Council: Messrs. Bailey, Booth, and Hoose. Committee appointed to nominate officers for this department: Messrs. Sheldon, Bulkley, Ashmore, Slade, and Hancock.

PROBLEMS TO BE SOLVED.

Hon. JOHN M. BLOSS, State Superintendent of Public Instruction, Indiana, delivered his inaugural, an abstract of which follows:—

Of the several departments of this Association there is none where greater problems are yet to be solved than in the Department of Primary Education. In the higher departments of education the work is strictly professional. Men and women whose attainments as educators are known are applicants, and find employment; but in the primary schools,—where the average life of the teacher does not exceed four years,—it is the inexperienced who are applicants; young men and women just from the common schools, the academy, the high school, or the college. Of these applicants who can pass, and have passed, examination as tests of scholarship, there is a surplus. But scholarship is only one of the many factors necessary to a teacher's success.

One of the problems yet to be solved is how to discover the true teacher among those who have attained the necessary scholarship. Is it the answer to this problem, that men and women of greater ability, wider experience, better judgment, who are themselves professional teachers, shall be placed at the head of examining boards; that there shall be supervisors of the country schools, who shall as closely inspect the work, direct the method of teaching, and supervise the employment of teachers, as is now done in our best town and city schools? Would this plan, under the direction of skilful men and women, lengthen the average life of teachers? Would it give us better ability to teach, better compensation for the work done, and a fuller appreciation of the results to society, to the State, and the nation?

It is not the end nor the purpose of the primary school to make scholars; but it should be their chief purpose to prepare the pupils for the exigencies of life, that when he leaves the school he may become an honorable and useful citizen. To fit every youth of our land scholastically to enter college would, indeed, be most desirable, if in addition to scholarship were added the necessary physical and moral culture. Scholarship alone cannot, and

does not, make good citizens. There must be added to scholarship moral culture in its widest sense to make the truly worthy citizen; not that moral culture alone which recognizes the existence of and the necessity for law and order and their applications to society, and that the laws of the State are based upon justice and the greatest good to the greatest number, but that kind of morals which recognizes a God above all, seeing all, and over all; the kind of moral culture which looks up through the inspiration to that God who is the author of all law and order; that kind of moral culture which not only polishes the exterior and guides the judgment, but that which reaches the heart. It should be our purpose to teach, not only what is right and what is wrong, but to fix in our pupils right habits of life and pure habits in thought.

There is another field in which it might be profitable for educators to make most searching investigation. There is seemingly a growing element in our country, who are not only without visible means of support, but who are unwilling to make any effort by physical labor to support themselves. These are the tramps, the gamblers, and that unclassifiable class who contend that the world owes them a living. These men have grown up among a people where the public or the private schools, or both, have exercised their influence. Might it not be possible that the growth of this anti-manual-labor class is due in some measure to the home training or to the education received in school, or to both? Is it not possible that the teachers so magnify the importance of intellectual culture, in order to stimulate the pupil to greater efforts in his attainments, that he indirectly and unconsciously places the stigma of coarseness and vulgarity upon all physical labor? That this class exists there can be no doubt; that it is not decreasing is almost as apparent; that in this grand country of ours there is no occasion for the existence of such a class is evident: hence there must be some cause for its growth and continuance. Since it is our duty as educators to make good citizens, here is another problem for us to solve. But time forbids that more of these problems be suggested.

The subject was discussed by Messrs. RICHARDS, SHELDON, BARRINGER, HOOSE, Mrs. RICKOFF, and Miss MORRIS.

THE MEMORY.

GEORGE P. BROWN, A. M., President of Indiana State Normal School, discussed "The Relation of Memory to Elementary Education."

WHAT, HOW, AND HOW BETTER.

Miss CARRIE B. SHARPE, of Indiana, next read a paper on the above topic.

This able paper was discussed by Mr. PEASLEE, Miss MORRIS, Messrs. HEWITT, BOYTON, and SANFORD, and Mrs. STONE.

BUSINESS.

The Committee on Election of Officers reported the following, who were duly elected : —

For President. — James B. Peaslee of Cincinnati, Ohio.

For Vice-President. — W. N. Barringer of Newark, N. J.

For Secretary. — Sterling G. Brinkley of Quitman, Ga.

For Council. — A. P. Marble, Massachusetts.

BOARD OF DIRECTORS. PROCEEDINGS FOR 1882.

OLD BOARD.

The Board met at 8.30 P. M., at the reading-room of Congress Hall, Saratoga, July 10, and was called to order by the President, GUSTAVUS J. ORR of Georgia. The vacancy in the secretaryship, caused by the lamented death of Dr. Henkle, was announced, and C. C. Rounds, of Maine, was chosen temporary secretary for this meeting of the Board. The report of the Treasurer, Eli T. Tappan of Ohio, was read and referred to an auditing committee consisting of Messrs. Tarbell of Indiana, Peaslee of Ohio, and Calkins of New York. Dr. E. E. WHITE reported that a plan had been devised by a committee of the National Council of Education for the publication of its own Proceedings without expense to the National Association, and on motion of Mr. RICKOFF it was voted to adopt it.

Mr. ROUNDS said that he could not serve as secretary *pro tem.* of the Association, and the Board elected William E. Sheldon of Boston as secretary for this meeting of the Association. The Board adjourned.

C. C. ROUNDS, *Secretary pro tem.*

SARATOGA, July 11, 1882.

The Board of Directors of the National Educational Association met at Congress Hall reading-room at 10.15 A. M., and was called to order by President ORR. The minutes of the last meeting were read and approved.

Mr. TARBELL, from the Committee on the Treasury, gave a report which showed that there was a deficit of \$557, and that there was now in the hands of the Treasurer about \$200 to meet the expenses of this meeting and to pay the present debt.

The question of the finances was discussed by Messrs. WHITE, SMART, TARBELL, SHELDON, and HARRIS.

Mr. SHELDON moved that a committee of five, consisting of Dr. Harris, Dr. White, Mr. Tarbell, Mr. Calkins, and Mr. Smart, be appointed a committee to consider the question of the deficit of the Association, and report some plan to keep the expenses within the income in future, and report at the next meeting of this Board.

Mr. TARBELL stated that there was a vacancy in the Board of Trustees to supervise the permanent fund.

Mr. SMART moved that the two remaining Trustees secure a third member of the Board of Trustees to give a new bond and surrender the other. Passed.

Dr. HARRIS moved that the President and Secretary be requested to invite each State Teachers' Association to appoint five delegates or more to attend the annual meetings of the National Association. Passed.

On motion of Mr. SMART, Mr. Danforth was added to the committee on the financial condition of the Association.

Adjourned.

W. E. SHELDON, *Secretary.*

SARATOGA SPRINGS, July 13, 1882.

The Board of Directors of the National Educational Association met at the call of the President, in the reading-room of Congress Hall, at 6 P. M., and was called to order by President ORR. Members present: Messrs. Orr, Morrison, Slade, Calkins, Speer, Brinkley, Barringer, White, Harris, Hewitt, Bicknell, Wyatt, Mowry, Richards, Hancock, Peaselee, Stevenson.

The minutes of the previous meeting were read and approved.

Mr. BICKNELL stated that there were two vacancies in the National Council, to be filled by this Board. Messrs. Harris, Hancock, and Brinkley were appointed a committee to nominate new members. They recommended the names of Gustavus J. Orr of Georgia, and C. C. Rounds of Maine, for six years, and the Secretary, W. E. Sheldon, was authorized to cast the ballot for their election, which he did, and declared Messrs. Orr and Rounds elected.

The entire question of finances was referred to the new Board of Directors.

Mr. HANCOCK moved that all joint bills be approved by the appropriate committees of the two Associations and settled by them. Passed.

Mr. BICKNELL moved that all unfinished business be referred to the new Board. Passed.

W. E. SHELDON, *Secretary.*

NEW BOARD.

JULY 13, 1882.

The new Board of Directors of the National Educational Association met at the call of President TAPPAN, and adjourned to meet at the call of the President.

W. E. SHELDON, *Secretary.*

SARATOGA SPRINGS, July 14, 1882.

The Board of Directors met at the reading-room of Congress Hall, at 8.30 A. M., President TAPPAN in the chair. Mr. SHELDON, in behalf of the Auditing Committee of the former Board, stated that the expenses of the present meeting of the Association would be about \$350.

Mr. PATTERSON, New Hampshire, moved the following resolution:—

“No contract or action involving the expenditure of money shall be binding on the Association until first ordered and approved by the Committee of Finance.” Passed.

Mr. BARRINGER moved that the Finance Committee be authorized to sell the volumes of Proceedings of the Association now on hand, at such price as they deem best, provided they retain for the Association fifty copies of each year. Passed.

Adjourned.

W. E. SHELDON, *Secretary*.

JULY 14, 1882.

The Board met at 1.15 P. M., at the reading-room, Congress Hall.

Ordered, That the President, Secretary, Treasurer, and Chairmen of the Departments, constitute a committee on place of holding the next annual meeting, with full powers. Passed.

Ordered, That Messrs. Sheldon, Tarbell, Bloss, Rounds, Andrews, and White constitute the Committee on Publication.

Voted, That the present Treasurer, H. S. Tarbell, be requested to hold his position as Treasurer until the next annual meeting.

Adjourned.

REPORT OF THE TREASURER, ELI T. TAPPAN.

THE NATIONAL EDUCATIONAL ASSOCIATION

In account with ELI T. TAPPAN, *Treasurer*.

The Treasurer charges himself with the following

RECEIPTS.

From 230 annual fees, names in Atlanta volume	\$460 00
“ three life members, Daniel F. DeWolf, John B. Peaslee, and Mrs. Frances C. Mallon	60 00
“ sale of volumes of Proceedings, J. C. Gilchrist, \$2.00; Robert Allyn, \$7.00; W. C. Whitford, \$12.75; R. P. Scott, \$2.00; J. V. Coombs, \$2.00; and —, \$2.00	27 75
“ one year's interest on \$200 permanent fund, being interest to 20th of July, 1882	12 00
	<u>\$559 75</u>

The Treasurer charges the Association with the following

PAYMENTS.

1881.	
July 18,	Balance due at settlement \$33 05
	W. D. Henkle, printing tickets, circulars, etc., for the
	Atlanta meeting 33 26
	Carriage for use of the President 2 00
	Printing slips for Treasurer 1 50
21,	James H. Smart, printing and postage 58 53
	Edward Danforth, " " " 52 95
	Louis Soldan, printing for National Council 27 20
Sept. 21,	Printing circulars for members, etc. 2 75
Oct. 22,	Wood-cut, eye 1 00
1882.	
July 5,	Mr. W. D. Henkle, printing, binding, and publishing
	1,000 copies Proceedings at Atlanta 898 22
	Total expense of 1881 \$1,110 46
	Mr. W. D. Henkle, for letter-heads and envelopes, distributed last November to officers of 1882, and postage 7 00
	<u>\$1,117 46</u>
	Amount overdrawn July 10, 1882 <u>557 71</u>

REPORT OF AUDITING COMMITTEE.

Examined and found correct.

H. S. TARBELL,
JOHN D. PEASLEE,
N. A. CALKINS,
Auditing Committee.

SARATOGA, N. Y., July 13, 1882.

VOLUMES OF PROCEEDINGS UNSOLD

In the Custody of the Treasurer, Dec. 1, 1882.

1858	8 volumes.	Price per volume, \$.50
1859	9 " " " "	.50
1863	13 " " " "	.50
1865	110 " " " "	.50
1866	117 " " " "	.50
1870	89 " " " "	.50
1871	96 " " " "	.50
1872	32 " " " "	1.75

1873	.	.	.	.	.	381	volumes.	Price per volume, \$1.50
1874	.	.	.	.	.	418	"	" " " 1.50
1875	.	.	.	.	.	322	"	" " " 1.50
1876	.	.	.	.	.	287	"	" " " 1.50
1877	.	.	.	.	.	324	"	" " " 1.50
1879	.	.	.	.	.	495	"	" " " 1.50
1880	.	.	.	.	.	452	"	" " " 1.50
1881	.	.	.	.	.	650	"	" " " 1.50

Any purchaser of a whole set of the Proceedings may have each volume, of which there are more than 50 copies unsold, for half the price named above.

The Secretary sent out 1,500 copies of the following circular to libraries, schools, colleges, and individuals:—

TO SCHOOL SUPERINTENDENTS, PRINCIPALS, AND TEACHERS.

The National Educational Association has for sale several hundred copies of its Proceedings, which are now offered at very low terms. These volumes contain many papers written by the ablest and most experienced teachers of the United States. Every teacher who aims at a knowledge of the latest thought on topics which interest the profession should consult these papers. Will you purchase them for yourself? Will you try to have a set purchased for the nearest public library?

The five volumes, for 1858, 1859, 1863, 1865, and 1866, are stitched in paper covers. There are 478 pages in the five; the price is 50 cents per volume. The eleven volumes, for 1870 to 1881 (no meeting in 1878), are bound in muslin, and average about 300 pages each. The price is \$1.50 per volume. A discount of one third the price will be made to any one buying ten or more volumes of the same or different years. The volumes will be delivered by mail free.

The last three volumes, 1879, 1880, and 1881, are offered to any one now becoming a member for \$1.00 per volume; that is, \$5.00 for these volumes and the membership for the year 1882. Every member receives the volume for the year without further expense.

We earnestly solicit all who receive this circular to use their influence to increase the membership of the Association.

By order of the committee,

W. E. SHELDON, *Secretary*,

16 HAWLEY STREET, BOSTON, MASS.

CONSTITUTION

OF THE

NATIONAL EDUCATIONAL ASSOCIATION.

PREAMBLE.

To elevate the character and advance the interests of the profession of teaching, and to promote the cause of popular education in the United States, we, whose names are subjoined, agree to adopt the following

CONSTITUTION.

[As Amended July 13 and 16, 1880.]

ARTICLE I. — NAME.

This Association shall be styled the National Educational Association.

ARTICLE II. — DEPARTMENTS.

SECT. 1. It shall consist of five departments: the first, of School Superintendence; the second, of Normal Schools; the third, of Elementary Schools; and the fourth, of Higher Instruction; and the fifth of Industrial Education, and a National Council of Education.

SECT. 2. Other departments may be organized in the manner prescribed in this Constitution.

ARTICLE III. — MEMBERSHIP.

SECT. 1. Any person in any way connected with the work of education shall be eligible to membership. Such person may become a member of this Association by paying two dollars and signing this Constitution; and he may continue a member by the payment of an annual fee of two dollars. On his neglect to pay such fee, his membership will cease.

SECT. 2. Each department may prescribe its own conditions of membership, provided that no person be admitted to such membership who is not a member of the general Association.

SECT. 3. Any person eligible to membership may become a life-member by paying at once twenty dollars.

ARTICLE IV. — OFFICERS.

SECT. 1. The officers of this Association shall be a President, twelve Vice-Presidents, a Secretary, a Treasurer, one Counsellor for each State, District, or Territory represented in the Association, and the officers charged with the administration of their respective departments. Any friend of education may become a life-director by the donation of one hundred dollars to the Association at one time, either by himself or on his behalf; and any educational association may secure a perpetual directorship by a like donation of one hundred dollars, the director to be appointed annually or for life.

SECT. 2. The President, Vice-Presidents, Secretary, Treasurer, Counsellors, Life-Directors, and presiding officers of their respective departments shall constitute the Board of Directors, and, as such, shall have power to appoint such committees from their own number as they shall deem expedient.

SECT. 3. The elective officers of the Association shall be chosen by ballot, unless otherwise ordered, on the second day of each annual session, a majority of the votes cast being necessary for a choice. They shall continue in office until the close of the annual session subsequent to their election, and until their successors are chosen.

SECT. 4. Each department shall be administered by a President, Vice-President, Secretary, and such other officers as it shall deem necessary to conduct its affairs.

SECT. 5. The President shall preside at all meetings of the Association and of the Board of Directors, and shall perform the duties usually devolving upon a presiding officer. In his absence, the first Vice-President in order who is present shall preside; and in the absence of all Vice-Presidents, a *pro tempore* chairman shall be appointed on nomination, the Secretary putting the question.

SECT. 6. The Secretary shall keep a full and accurate report of the proceedings of the general meetings of the Association and all meetings of the Board of Directors, and shall conduct such correspondence as the Directors may assign, and shall have his records present at all meetings of the Association and of the Board of Directors. The Secretary of each department shall, in addition to performing the duties usually pertaining to his office, keep a list of the members of his department.

SECT. 7. The Treasurer shall receive and hold in safe keeping all moneys paid to the Association, shall expend the same only upon the order of the Committee of Finance, shall keep an exact account of his receipts and expenditures, with vouchers for the latter, which accounts he shall render to the Board of Directors prior to each regular meeting of the Association, and shall also present an abstract thereof to the Association. He shall give bond for the faithful discharge of his duties as may be required by the Board of Directors.

SECT. 8. The Board of Directors shall have power to fill all vacancies in their own body, shall have in charge the general interests of the Associa-

tion, shall make all necessary arrangements for its meetings, and shall do all in its power to make it a useful and honorable institution. Upon the written application of twenty members of the Association for permission to establish a new department, they may grant such permission. Such new department shall in all respects be entitled to the same rights and privileges as the others. The formation of such department shall in effect be a sufficient amendment to this Constitution for the insertion of its name in Article II., and the Secretary shall make the necessary alterations.

SECT. 9. The Board of Directors shall appoint three Trustees, into whose hands shall be placed for safe keeping and investment all funds which the Association may receive from the creation of life-directorships, or from donations, unless the donors shall specify other purposes for which they may be used. The income of such funds so invested shall be used exclusively in defraying the expense of publishing the annual volume of the Association, unless the donors shall specify otherwise. The Board of Directors shall require such Trustees to give to the Association their joint bond in a sum equal to twice the amount of such trust fund as may be in their hands.

ARTICLE V. — MEETINGS.

SECT. 1. The annual meeting of the Association shall be held at such time and place as shall be determined by the Board of Directors.

SECT. 2. Special meetings may be called by the President at the request of five Directors.

SECT. 3. Any department of the Association may hold a special meeting at such time and place as by its own regulations it shall appoint.

SECT. 4. The Board of Directors shall hold their regular meetings at the place, and not less than two hours before the assembling of the Association.

SECT. 5. Special meetings may be held at such other times and places as the Board or the President shall determine.

SECT. 6. Each new Board shall organize on the day of its election. At its first meeting a Committee on Publication shall be appointed, which shall consist of the Secretary of the Association for the previous year, and one member from each department.

ARTICLE VI. — BY-LAWS.

By-Laws, not inconsistent with this Constitution, may be adopted by a two-thirds vote of the Association.

ARTICLE VII. — AMENDMENTS.

This Constitution may be altered or amended at a regular meeting by the unanimous vote of the members present, or by a two-thirds vote of the members present, provided that the alteration or amendment has been substantially proposed in writing at a previous meeting.

BY-LAWS.

1. At each regular meeting of the Association there shall be appointed a Committee on Nominations, one on Honorary Members, and one on Resolutions.

2. The President, First Vice-President, and Secretary shall constitute a Committee on Finance.

3. Each paying member of the Association shall be entitled to a copy of its Proceedings.

4. No paper, lecture, or address shall be read before the Association or any of its departments in the absence of its author, nor shall any such paper, lecture, or address be published in the volume of Proceedings without the consent of the Association in each case.

MEMBERSHIP
OF THE
NATIONAL EDUCATIONAL ASSOCIATION.

PERPETUAL DIRECTORSHIP.

PHILADELPHIA, 1879.

PHILADELPHIA TEACHERS' INSTITUTE; represented in 1882 by A. J. Morrison.

LIST OF LIFE-DIRECTORS.

LOUISVILLE, 1877.

Marshall, T. Marcellus, Glenville, W. Va.

ATLANTA, 1881.

Rickoff, Andrew J., Yonkers, N. Y.

LIST OF LIFE-MEMBERS.

[Addresses have been changed from those of last year only in cases in which the change has come under the positive knowledge of the Secretary.]

OGDENSBURG, 1864.

Barnard, Henry, Hartford, Conn.	Hagar, D. B., Salem, Mass.
Bradley, P., Lyons, N. Y.	Pennell, C. S., St. Louis, Mo.
Cruikshank, Jas., Brooklyn, N. Y.	Richards, Z., Washington, D. C.
Danforth, Edward, Elmira, N. Y.	Wells, D. F.,* Iowa City, Iowa.
Eberhart, J. F., Chicago, Ill.	White, S. H.,* Peoria, Ill.

HARRISBURG, 1865.

Greene, S. S., Providence, R. I.	Sheldon, W. E., Boston, Mass.
Hartshorn, O. N., Mt. Union, Ohio.	Wickersham, J. P., Harrisburg, Pa.
Ingram, S. D., Harrisburg, Pa.	

* Deceased.

INDIANAPOLIS, 1866.

Curran, U. T., Sandusky, Ohio.	Mayhew, Ira, Albion, Mich.
McRae, H. S., Muncie, Ind.	Norris, J. A.,* Columbus, Ohio.

CLEVELAND, 1870.

Arey, Oliver, Cleveland, Ohio.	Williams, Mrs. Delia A., Delaware, O.
Allen, Ira W., Chicago, Ill.	Manly, R. M., Richmond, Va.
Cole, W. H., Marysville, Ohio.	M'Guffey, W. H.,* Charlottesville, Va.
Crosby, W. E., Davenport, Iowa.	Phelps, W. F., Winona, Minn.
Hoyt, J. W., Madison, Wis.	Read, Daniel,* Columbia, Mo.
Hoose, J. H., Cortland, N. Y.	Rickoff, A. J., Yonkers, N. Y.
Hobbs, B. C., Annapolis, Ind.	Stone, Mrs. M. A., New Milford, Ct.
Heywood, C. W., Cheshire, Mich.	Tourjee, Eben, Boston, Mass.
Holden, L. E., Cleveland, Ohio.	Wilcox, M. C., Boston, Mass.
Jones, D. W., Boston, Mass.	White, Emerson E., Lafayette, Ind.

ST. LOUIS, 1871.

Anderson, J. J., Brooklyn, N. Y.

BOSTON, 1872.

Stone, E. M., Providence, R. I.

ELMIRA, 1873.

Haines, Miss Henrietta B.,* New York, N. Y.

BALTIMORE, 1876.

Armstrong, Allen, Sioux City, Iowa.	Marshall, T. M., Glenville, W. Va.
Beals, S. D., Omaha, Neb.	Newell, M. A., Baltimore, Md.
Bell, W. A., Indianapolis, Ind.	Richmond, Sarah E., Baltimore, Md.
Brooks, Edward, Millersville, Pa.	Rollins, James S., Columbia, Mo.
Dorna, G. Videla, New York, N. Y.	Rounds, C. C., Farmington, Me.
Forbes, Alex., Cleveland, Ohio.	Schmitz, J. Adolph, Lake Forest, Ill.
Hancock, John, Dayton, Ohio.	Stevens, M. C., Lafayette, Ind.
Harris, W. T., Concord, Mass.	Thompson, L. S., Lafayette, Ind.
Henkle, W. D.,* Salem, Ohio.	

LOUISVILLE, 1877.

Bartholomew, W. H., Louisville, Ky.	Monsarrat, Mrs. L. L., Louisville, Ky.
Franklin, M. B., Grapevine, Texas.	Smart, J. H., Indianapolis, Ind.
Kalfus, Anna I., Louisville, Ky.	Soldan, F. Louis, St. Louis, Mo.
Mills, Caleb,* Crawfordsville, Ind.	

PHILADELPHIA, 1879.

Calkins, N. A., New York, N. Y.	Kraus, John, New York, N. Y.
Foster, Rachel Gordon, Philadelphia, Pa.	McMillan, Reuben, Youngstown, O.
	Paxson, Joseph A., Philadelphia, Pa.
Gratz, Simon, Philadelphia, Pa.	Shippen, Edward, Philadelphia, Pa.

CHAUTAUQUA, 1880.

Bennett, Hampton, Franklin, Ohio.	McMillan, Mrs. S., Youngstown, O.
Bibb, Grace C., Columbia, Mo.	Marble, Albert P., Worcester, Mass.
Brown, G. P., Terre Haute, Ind.	Miller, Lewis, Akron, Ohio.
Brown, Leroy D., Hamilton, Ohio.	Patridge, Lelia E., Philadelphia, Pa.
Burns, James J., Chillicothe, Ohio.	Peaslee, John B., Cincinnati, Ohio.
Coe, Miss E. M., New York, N. Y.	Rickoff, Mrs. R. D., Yonkers, N. Y.
Davidson, C. C., New Lisbon, Ohio.	Setzepfand, A., Dalton, Ga.
Dutton, Bettie A., Cleveland, Ohio.	Spring, E. A., Perth Amboy, N. J.
Gilchrist, J. C., Cedar Falls, Iowa.	Stevenson, R. W., Columbus, Ohio.
Hitz, John, Washington, D. C.	Widner, Esther, Dayton, Ohio.
Irwin, J. S., Fort Wayne, Ind.	Wilson, J. O., Washington, D. C.

ATLANTA, 1881.

DeWolf, Daniel F., Columbus, O.	Woodward, G. A., Selma, Ala.
Mallon, Mrs. Frances C., Atlanta, Ga.	

SARATOGA, 1882.

Bicknell, T. W., Boston, Mass.	Stern, M., New York, N. Y.
Hodgdon, Josephine E., Concord, N. H.	Tappan, Eli T., Gambier, Ohio.
Robert, J. A., Dayton, Ohio.	

* Deceased.

NAMES ENROLLED AT SARATOGA,

ARRANGED ALPHABETICALLY BY STATES.

[The names in *italics* are those of life-members.]

ALABAMA.

Miss Kate Edmond, Selma.	John Massey, Tuskegee.
Miss Nellie C. Gibbs, Selma.	Miss M. R. Thornton, Livingston.
Miss Grace Jones, Selma.	Miss Julia S. Tutweiler, Livingston.
Mrs. Mary F. Knight, Selma.	W. W. Wilson, Birmingham.
Miss E. Rose Lewis, Selma.	

CONNECTICUT.

Henry M. Adams, Broad Brook.	Miss L. M. Newton, Bridgeport.
Henry Barnard, Hartford.	Melville A. Stone, Meriden.
D. N. Camp, New Britain.	<i>Mrs. M. A. Stone</i> , New Milford.
Augustus Morse, Hartford.	J. H. Vincent, New Haven.

GEORGIA.

Otis Ashmore, Harlem.	Edgar H. Orr, Atlanta.
Samuel Barnett, Washington.	Gustavus J. Orr, Atlanta.
W. B. Bonnell, Covington.	Mrs. Gustavus J. Orr, Atlanta.
John F. Bonnell, Oxford.	Miss Sophia B. Packard, Atlanta.
Mrs. S. G. Brinkley, Quitman.	Howard E. W. Palmer, Waynesboro'.
Miss Alice Brinkley, Quitman.	William L. C. Palmer, Norwood.
Sterling G. Brinkley, Quitman.	Miss Basiline Prince, Athens.
J. A. Burns, Atlanta.	Joseph T. Robert, Atlanta.
Miss Mary J. Dunwody, Atlanta.	Miss Millie Rutherford, Athens.
John W. Glenn, Jefferson.	Miss Bessie Rutherford, Athens.
E. P. Hull, Washington.	S. C. Sanders, Washington.
Miss Susie E. Johnston, Atlanta.	George W. W. Stone, Oxford.
Miss Loula J. Lannean, Atlanta.	Harry H. Stone, Oxford.
Mrs. M. A. Lipscomb, Athens.	D. F. C. Timmons, Social Circle.
Miss Marion Malone, Atlanta.	Edmund A. Ware, Atlanta.

ILLINOIS.

Miss Harriet T. Benton, Chicago.	E. O. Vaile, Oak Park.
Edwin C. Hewett, Normal.	Frank B. Williams, Chicago.
Joseph P. Slade, Springfield.	

INDIANA.

John M. Bloss, Indianapolis.	Miss Carrie B. Sharp, Fort Wayne.
<i>George P. Brown</i> , Terre Haute.	<i>James H. Smart</i> , Indianapolis.
Mrs. George P. Brown, Terre Haute.	H. S. Tarbell, Indianapolis.
D. S. Kelly, Jeffersonville.	<i>L. S. Thompson</i> , Lafayette.
Ruth Morris, Terre Haute.	<i>E. E. White</i> , Lafayette.
Lemuel Moss, Bloomington.	

IOWA.

George S. Farnham, Council Bluffs. J. L. Pickard, Iowa City.

KANSAS.

George T. Fairchild, Manhattan.	H. C. Speer, Topeka.
James T. Marvin, Lawrence.	

KENTUCKY.

<i>W. H. Bartholomew</i> , Louisville.	Miss Lucy J. Roberts, Louisville.
C. H. Dietrich, Hopkinsville.	

MASSACHUSETTS.

<i>T. W. Bicknell</i> , Boston.	<i>A. P. Marble</i> , Worcester.
Albert G. Boyden, Bridgewater.	F. W. Parker, Boston.
L. A. Butterfield, Boston.	T. H. Safford, Williamstown.
John S. Clark, Boston.	Edwin P. Seaver, Boston.
J. W. Dickinson, Boston.	<i>W. E. Sheldon</i> , Boston.
Larkin Dunton, Boston.	William H. Spencer, Florence.
Otto Fuchs, Boston.	A. P. Stone, Springfield.
Daniel B. Hagar, Salem.	George A. Walton, West Newton.
John E. Kimball, Newtonville.	

MAINE.

C. C. Rounds, Farmington.

MICHIGAN.

A. E. Curtis, Adrian.

MINNESOTA.

William W. Folwell, Minneapolis. D. S. Kiehle, St. Paul.

MISSOURI.

E. Rutledge Booth, Kirkwood.	Miss Ophelia Parrish, Springfield.
Jonathan Fairbanks, Springfield.	Miss Laura M. Whitson, Springfield.
Miss Sallie A. Ingram, Springfield.	Miss C. M. Woodward, St. Louis.

NEBRASKA.

Miss Eliza C. Morgan, Peru.

NEW HAMPSHIRE.

Miss Josephine E. Hodgdon, Concord. John Henry Wright, Hanover.

Miss J. M. Patterson, Concord.

NEW JERSEY.

S. W. Anderson, Jersey City.
 William N. Barringer, Newark.
 George H. Barton, Jersey City.
 James Cusack, Jersey City.
 William L. Dickinson, Jersey City.
 H. E. Fabens, Elizabeth.
 L. F. Fabens, Elizabeth.
 Edward Kelley, Jersey City.
 Miss A. M. Leech, Lambertville.
 Miss Mary Y. Leech, Lambertville.

Miss Huldah Palmer, Brick Church.
 Henry B. Pierce, New Brunswick.
 Mrs. H. B. Pierce, New Brunswick.
 Miss Ida Pearson, Lambertville.
 J. C. Rinehart, Greenville.
 Mrs. J. C. Rinehart, Greenville.
 Henry K. Trask, Bridgeton.
 Mrs. H. K. Trask, Bridgeton.
 Miss Alice W. Vose, Bridgeton.

NEW YORK.

Miss Emma P. Abell, Canajoharie.
 Miss Sarah Ball, Brooklyn.
 C. W. Bardeen, Syracuse.
 Chas. P. Barker, New York City.
 Miss Julia A. Bell, New York City.
 E. N. Bristol, New York City.
 Miss Jennie B. Brooks, Elmira.
 Nathaniel N. Bull, Oneonta.
 J. W. Bulkley, Brooklyn.
 Miss Ella Calkins, New York City.
N. A. Calkins, New York City.
 Chas. N. Cobb, Auburn.
 Miss F. S. Comings, Brooklyn.
 Miss J. S. Coomes, Brooklyn.
 Miss Matilda L. Cooper, Oswego.
 L. B. Corey, Hicksonville, L. I.
 Mrs. L. B. Corey, Hicksonville, L. I.
 A. P. Crane, New York City.
 Miss Edith H. Crane, New York City.
Edward Danforth, Elmira.
 Miss Mary Davenport, Brooklyn.
 Virgil C. Douglas, Oswego.
 Margaret Dorman, New York City.

S. A. Ellis, Rochester.
 J. C. Flanagan, New York City.
 Miss A. W. Geortner, Canajoharie.
 Neil Gilmour, Albany.
 W. D. Graves, Bainbridge.
 Mrs. W. D. Graves, Bainbridge.
 M. F. Grosz, New York City.
 H. Grosz, New York City.
 Frances M. Gutch, New York City.
 Frances E. A. Gutch, New York City.
J. H. Hoose, Cortland.
 Mary C. Hepburn, New York City.
 P. B. Hulse, New York City.
 Amos M. Kellogg, New York City.
 Hyland C. Kirk, Phelps.
 Myron C. Ladd, Mohawk.
 Francis P. Lantry, Manlius.
 Henry T. Little, New York City.
 Mrs. Henry T. Little, New York City.
 Miss Pauline L. Lass, New York City.
 Miss Annie McVey, New York City.
 S. Mansfield, Wappinger's Falls.
 Wm. J. Milne, Genesee.

Thomas J. Morgan, Potsdam.
 Miss Mary J. Morgan, Lima.
 Amelia B. Myers, Oswego.
 J. A. Nichols, Yonkers.
 J. Carlton Norris, Walworth.
 Calvin Patterson, Brooklyn.
 A. Reed, Brooklyn.
 Mrs. A. Reed, Brooklyn.
 F. A. Robinson, West Granville.
 Johannes Roeloffs, New York City.
 Henry R. Sanford, Middletown.
 Geo. C. Shults, Potsdam.

J. Dorman Steele, Elmira.
M. Stern, New York City.
 Miss Editha Stephens, Cortland.
 Henry H. Straight, Oswego.
 Miss Julia Thomas, New York City.
 Miss Mary Trumbull, Sandy Hill.
 Mrs. G. Van Akin, New York City.
 Ophelia Y. Udell, Brooklyn.
 C. W. Wasson, Friendship.
 J. H. Weinmann, Kingsboro'.
 Fannie D. Wilcox, Catskill.
 Fred N. Wright, Jordan.

NORTH CAROLINA.

E. P. Semple, Charlotte.

OHIO.

Israel W. Andrews, Marietta.
 M. R. Andrews, Marietta.
 Augusta M. Boedocker, Dayton.
 C. G. Bragg, Cincinnati.
 Mary M. Denig, Columbus.
Bettie A. Dutton, Cleveland.
 John W. Dowd, Toledo.
 Martha E. French, Cleveland.
 T. C. Flanegin, Pomeroy.
 Samuel Findley, Akron.
 W. S. Goodnough, Columbus.
 J. M. Goodspeed, Athens.
 A. E. Gladding, Monroeville.
 Louta Hamilton, Columbus.
John Hancock, Dayton.
 Thomas W. Harvey, Painesville.
 J. B. Irvin, Dayton.

E. A. Jones, Massillon.
 J. H. Lehman, Canton.
 Charles Loos, Jr., Dayton.
 H. N. Mertz, Steubenville.
John B. Peaslee, Cincinnati.
 Mary L. Peterson, Cleveland.
A. J. Rickoff, Cleveland.
Rebecca D. Rickoff, Cleveland.
J. A. Roberts, Dayton.
 Margaret W. Sutherland, Mansfield.
R. W. Stevenson, Columbus.
 Mrs. R. W. Stevenson, Columbus.
 Lucia Stickney, Cincinnati.
Eli T. Tappan, Gambier.
 Mrs. E. T. Tappan, Gambier.
 C. K. Wells, Marietta.
Esther Widner, Dayton.

PENNSYLVANIA.

Miss Laura Adams, Bradford.
 Miss Emma Aiken, New Brighton.
 George P. Beard, California.
 J. A. Cooper, Edinboro'.
 A. B. Corliss, Trevoise.
 Joseph K. Gotwals, Norristown.
 Gustave Guttenberg, Erie.
 E. T. Jeffers, New Wilmington.
 Henry C. Johnson, Bethlehem.

Mrs. Henry C. Johnson, Bethlehem.
 Henry S. Jones, Erie.
 Richard M. Jones, Philadelphia.
 Theodore B. Noss, California.
 Miss Emily J. Olds, Erie.
 Miss Della J. Patterson, New Wil-
 mington.
Edgar A. Singer, Philadelphia.

LIST OF MEMBERS.

xliii

RHODE ISLAND.

A. M. Gamwell, Providence.	Alvin T. Pease, Pawtucket.
J. C. Greenough, Providence.	J. T. Smith, Warwick.
W. A. Mowry, Providence.	

SOUTH CAROLINA.

Virgil C. Dibble, Chartertin.	James H. Carlisle, Spartanburg.
-------------------------------	---------------------------------

TENNESSEE.

Eben S. Stearns, Nashville.	H. D. Wyatt, Chattanooga.
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TEXAS.

Alexander Hogg, Fort Worth.

VERMONT.

C. H. Dunton, Poultney.	James F. Eaton, Bridport.
Mrs. C. H. Dunton, Poultney.	

VIRGINIA.

Edward Daniels, Gunston Hall.	A. P. Hull, Charlottesville.
William F. Fox, Richmond.	

WISCONSIN.

James McAlister, Milwaukee.	A. S. Chapin, Beloit.
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WASHINGTON, D. C.

<i>John Hitz</i> , Washington, D. C.	<i>Z. Richards</i> , Washington, D. C.
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CANADA.

A. D. Lacroix, Montreal.	M. H. Sanborn, Montreal.
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ENGLAND.

William Moon, Brighton.

SUPPLEMENTARY LIST OF MEMBERS FOR 1882.

THE Board of Directors authorized the Secretary, in view of the fact that the receipts for membership had not been so large as was expected, not being sufficient to meet even the deficiency in the publication of the Atlanta Proceedings, thus leaving nothing for printing of the Saratoga Proceedings, appealed to prominent educators and teachers to enroll themselves in the list of members for 1882. The Secretary issued the following appeal : —

NATIONAL EDUCATIONAL ASSOCIATION.

BOSTON, October, 1882.

My dear Sir, — You are earnestly invited to renew your membership to the National Educational Association, or become a life-member. The annual fee is \$2 ; life-membership, \$20. Each annual member is entitled to a volume of the Proceedings *free*. Life-members are entitled to volumes from the date of their certificates, so long as the Association continues. The volume of 1882 will be of unusual value. Please forward immediately the fee to the undersigned, and receive in return a certificate of membership. The need of funds is urgent, to enable the Publication Committee to publish the volume of 1882.

Yours most truly,

W. E. SHELDON,
Secretary National Educational Association,
16 HAWLEY STREET, BOSTON, MASS.

The following persons responded, and are entitled to all the privileges of annual members for 1882 : —

GEORGIA.

W. H. Crogman.

ILLINOIS.

Robert Allyn, Carbondale.

John Hull, Carbondale.

INDIANA.

William S. Wood, Seymour.

IOWA.

C. P. Rogers, Marshalltown.

KENTUCKY.

Samuel P. Lacey, Midway.

L. G. Marshall, Cynthiana.

MASSACHUSETTS.

C. A. Ames, Boston.

NEBRASKA.

W. W. W. Jones, Lincoln.

S. R. Thompson, Lincoln.

OHIO.

C. W. Bennett, Piqua.

Etta L. Dunlap, Danville.

H. A. Thompson, Westerville.

SOUTH CAROLINA.

A. W. Farnham, Charleston.

Miss I. D. Martin, Columbia.

B. R. Turnipseed, Ridgeway.

WISCONSIN.

Robert Graham, Madison.

Five life-members paid the annual fee of two dollars : D. B. Hagar, Massachusetts ; J. H. Hoose, New York ; A. J. Rickoff, New York ; Mrs. Rebecca D. Rickoff, New York ; and John B. Peaslee, Ohio.

CALENDAR OF MEETINGS.

NATIONAL TEACHERS' ASSOCIATION.

1857. — PHILADELPHIA, PA.

Organized.

JAMES L. ENOS, *Pres.*,

W. E. SHELDON, *Sec.*,

1858. — CINCINNATI, OHIO.

Z. RICHARDS, *Pres.*,

J. W. BULKLEY, *Sec.*,

A. J. RICKOFF, *Treas.*

1859. — WASHINGTON, D. C.

A. J. RICKOFF, *Pres.*,

J. W. BULKLEY, *Sec.*,

C. S. PENNELL, *Treas.*

1860. — BUFFALO, N. Y.

J. W. BULKLEY, *Pres.*,

Z. RICHARDS, *Sec.*,

O. C. WIGHT, *Treas.*

1861. — No Session.

1862. — No Session.

1863. — CHICAGO, ILL.

JOHN D. PHILBRICK, *Pres.*,

JAMES CRUIKSHANK, *Sec.*,

O. C. WIGHT, *Treas.*

1864. — OGDENSBURG, N. Y.

W. H. WELLS, *Pres.*,

DAVID N. CAMP, *Sec.*,

Z. RICHARDS, *Treas.*

1865. — HARRISBURG, PA.

S. S. GREENE, *Pres.*,

WILLIAM E. SHELDON, *Sec.*,

Z. RICHARDS, *Treas.*

1866. — INDIANAPOLIS, IND.

J. P. WICKERSHAM, *Pres.*,

S. H. WHITE, *Sec.*,

S. P. BATES, *Treas.*

1867. — No Session.

1868. — NASHVILLE, TENN.

J. M. GREGORY, *Pres.*,

L. VAN BOKKELEN, *Sec.*,

JAMES CRUIKSHANK, *Treas.*

1869. — TRENTON, N. J.

L. VAN BOKKELEN, *Pres.*,

W. E. CROSBY, *Sec.*,

A. L. BARBER, *Treas.*

1870. — CLEVELAND, OHIO.

DANIEL B. HAGAR, *Pres.*,

A. P. MARBLE, *Sec.*,

W. E. CROSBY, *Treas.*

NATIONAL EDUCATIONAL ASSOCIATION.

1871. — ST. LOUIS, MO.

J. L. PICKARD, *Pres.*,

W. E. CROSBY, *Sec.*,

JOHN HANCOCK, *Treas.*

1872. — BOSTON, MASS.

E. E. WHITE, *Pres.*,

S. H. WHITE, *Sec.*,

JOHN HANCOCK, *Treas.*

1873. — ELMIRA, N. Y.

B. G. NORTHROP, *Pres.*,

S. H. WHITE, *Sec.*,

JOHN HANCOCK, *Treas.*

1874. — DETROIT, MICH.

S. H. WHITE, *Pres.*,

A. P. MARBLE, *Sec.*,

JOHN HANCOCK, *Treas.*

1875. — MINNEAPOLIS, MINN.

W. T. HARRIS, *Pres.*,

W. R. ABBOT, *Sec.*,

A. P. MARBLE, *Treas.*

1876. — BALTIMORE, MD.

W. F. PHELPS, *Pres.*,

W. D. HENKLE, *Sec.*,

A. P. MARBLE, *Treas.*

1877. — LOUISVILLE, KY.

M. A. NEWELL, *Pres.*,

W. D. HENKLE, *Sec.*,

J. ORMOND WILSON, *Treas.*

1878. — No Session.

1879. — PHILADELPHIA, PA.

JOHN HANCOCK, *Pres.*,

W. D. HENKLE, *Sec.*,

J. ORMOND WILSON, *Treas.*

1880. — CHAUTAUQUA, N. Y.

J. ORMOND WILSON, *Pres.*,

W. D. HENKLE, *Sec.*,

E. T. TAPPAN, *Treas.*

1881. — ATLANTA, GA.

JAMES H. SMART, *Pres.*,

W. D. HENKLE, *Sec.*,

ELI T. TAPPAN, *Treas.*

1882. — SARATOGA SPRINGS, N. Y.

ELI T. TAPPAN, *Pres.*,

W. E. SHELDON, *Sec.*,

N. A. CALKINS, *Treas.*

OFFICERS FOR 1882-3.

GENERAL ASSOCIATION.

ELI T. TAPPAN, Gambier, Ohio	<i>President.</i>
JOHN W. DICKINSON, Boston, Mass.	<i>First Vice-President.</i>
WILLIAM E. SHELDON, Boston, Mass.	<i>Secretary.</i>
N. A. CALKINS, New York City	<i>Treasurer.</i>

[For other Vice-Presidents and Counsellors, see pages xviii, xix.]

COUNCIL OF EDUCATION.

THOMAS W. BICKNELL, Boston, Mass.	<i>President.</i>
EMERSON E. WHITE, Lafayette, Ind.	<i>Vice-President.</i>
C. C. ROUNDS, Farmington, Me.	<i>Secretary.</i>

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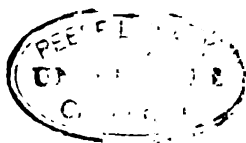
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ADDRESSES
OF
GENERAL ASSOCIATION.



THE UNIVERSITY; ITS PLACE AND WORK IN THE AMERICAN SYSTEM OF EDUCATION.

BY ELI T. TAPPAN, LL.D., GAMBIER, O.

It is assumed in the statement of the topic that there is a system of education in America, and that the University has a place and a work in that system. The determination of the place will not be difficult if we can distinguish what is the proper work of the University, wherein it differs from other educational works, and particularly from the works of the College.

This distinction must be between things rather than between names. The corporate name affords no information as to the character of a school; we know many legally named Universities which hardly rank higher than grammar schools, and whose best work consists in preparing students for college.¹

The distinction between College and University does not consist in the power to confer degrees. Several States have been very loose in their legislation on this subject; they have vested in inferior schools the power to confer all kinds of academic degrees that ever have been conferred, and to invent new kinds, such as were unknown to our forefathers, and are wonderful to us. In consequence, academic degrees have become of little estimation.² Men who are known to be learned, sometimes prefer to drop the titles of Doctor and Professor

Every academic degree ought to be evidence of some work accomplished by the graduate. Degrees are of different rank. In order that they may be respected as evidence of work done, there should be

¹ This fallacy of looking at the name alone was made by a distinguished college president, in an address to the National Education Association, some years ago. By adroitly arguing upon names he instanced the number of so-called colleges and universities in Ohio, for the purpose of making a point in favor of institutions supported by the State. In fact, there are about fifteen colleges in Ohio. The managers of other schools bearing the name of college or of university know as well as we do that they are misnamed, but this does not prevent their doing excellent school work.

² Much of this talk about "honorary degrees" is merely superficial. There is far more abuse in the way degrees are conferred in regular course. The baccalaureate is frequently given at the close of a rather slender high-school course. There are thousands of Doctors that have received the degree in regular course, who could not pass the examination for admission to a respectable high-school. They can neither write good Latin nor speak good English. There may be some that have received the *honorary* degree of Doctor who are as ignorant as these; if so, they are comparatively rare.

definitions as precise as possible of the various grades of work in college and in university. Then the baccalaureate might be regarded as the collegiate, and the magisterial or doctorate as the university degree. Let credit be given to those schools which are working in this direction.

The only essential distinction between college and university must consist in the work done. College work is confined mainly to liberal education. (The sins against education, under the guise of this word "liberal," have scarcely been surpassed by those against human rights under the guise of liberty.)

The study of the liberal arts,—*honestarum artium cultus*, in which Agricola passed his boyhood and youth,—has these objects: to discipline the intellect in acquiring, preserving, increasing, and imparting knowledge; to free the mind from prejudice, to sharpen it for the detection of error, and to purify it for the reception of truth. A liberal course of study, however much it may vary from age to age,—and it must vary as the world makes progress,—always must have these ends. There should be some study of natural science; the eye must be taught to see, the ear to hear, the fingers to touch, and the soul to recognize the glorious apparel of nature and the sweet and solemn tones of her voice; the faculty of observation must be trained, so that law may be recognized as something else than chaos. There should be some study of pure mathematics, training the mind to exact thought expressed in exact words, and giving the soul an opportunity to bathe itself in knowledge that is absolutely pure,—a science in which the rules have no exceptions. There should be some study of man, his relations to nature, to his fellow-men, and to his Creator; his history, his past, his present, and his future. Then, preceding all these studies, and accompanying all and crowning all, there must be the study of language, which is the vehicle of all thought, the record of all knowledge, the ornament of every science, the salvation of every art.

Contrasted with the liberal is the useful course of study, which is to prepare men to be of use to their fellow-beings. Not but that the liberal education is useful in every sense of the word, but its immediate effects are in the good of the student; it is to him an end. Hence the contrast with other studies whose *sole* object is to prepare men to do good to others. The liberal education does this by first creating the power to labor; the useful courses are to furnish the special knowledge which constitutes the tools. Formerly there were three principal courses, having for their objects the healing of disease, the administration of justice, and the cure of souls; but in these days,

nature is pursued with untiring energy, and her every force is made to serve her lord and master, man; and the courses of useful study are as various as the needs of humanity. Such studies belong to the university. They are properly termed useful. Every one of them is a means to some good end.

While the distinction between liberal and useful studies is clear, yet some studies partake of both characters. There comes into the lower schools much that is intended to be used in professional or other work; and there are always in the university many students who are pursuing either the classics or the sciences for the pure love of knowledge. Nevertheless, the essential difference between liberal and useful remains, and must remain as long as education is a science. This distinction nearly divides the college from the university work. The college education is almost exclusively liberal. The university education, in addition to the philosophical course which consists of liberal studies, includes all professional studies, all the sciences.

In the university work, courses of study are elective. Since every student may be assumed to be gaining knowledge for a particular kind of useful labor, election is necessary. When this general truth is taken as a premise from which to infer the simple converse, the argument is fallacious. It does not follow that a school which allows entire freedom in the election of courses of study is necessarily a university. The proposition is not stated in that plain way,—sophistry is not usually clothed in simple attire,—but some teachers appear to believe in their hearts that freedom in the election of studies goes a great way toward making a university.

Some have gone to the opposite extreme, and hold that in the college course there must be no election of studies. Without admitting this, the discussion of which would be aside from the subject, too much freedom of election, as allowed in some schools, is destructive of right liberal education, without which no one ought to enter a university. A liberal education ought to include the four elements above stated,—nature, mathematics, man and his work, and language. To allow a selection which omits either one of these, makes a course which is not general but one-sided. Such an education is not liberal but contracted. Ordinarily that particular department of study which a student deserts is that which he most needs. With no adequate general preparation, he wishes to pursue a course which he thinks will be useful in his future business or favorite science. If such a man is indulged, he is apt to be a failure, narrow. For the sake of all true education, university studies, including elective courses preparing for future business, ought to be preceded by a broad liberal

course. As some of the better colleges have courses, the last year of which is part university work, free election of studies in that year may be proper.

There is now in this country a great deal of university work ; much is done in colleges, and much by the better professional schools. Those professional schools which admit students with no adequate general or liberal education, can hardly be said to be doing anything fit to be named in a classification of schools. Also those few great schools where original research is made in order to increase knowledge among men, are doing university work.

In view of these facts, the question arises : Is it desirable to increase the number of distinct universities, institutions which do true-university work, and that alone ? If it is desirable, then what can be done toward that end ?

The opinion is gaining, that the general or liberal educational work and the professional or special educational work would both be benefited by a separation. This may be effected either by a separation of schools, or by some line of demarcation if both university and college work are done in one school. Whenever this is done, there should be a corresponding graduation, the baccalaureate degree for the college course, and the degree of Master or Doctor for a certain amount of university work. Within the last thirty years great additions have been made to the regular course in many colleges. This increase of scientific and classical study has not hastened the organization of distinct universities. Many of these colleges which do some university work are so situated that they cannot afford to give up either the beginning or the end of the course, and there is no reason to expect any such action. If those colleges where the general education is less than the whole course would separate the liberal or college from the university course, and give the baccalaureate degree to the former, it would be a step toward the separation of things which are in their nature different. This, however, is only a matter of organization, and not the essence of a university.

In order that good university work may exist, two things are essential,— teachers and students.

The teachers must be among the most eminent in the world in their several branches of knowledge. The number of such men in this country is not great, in proportion to our population, but it has increased of late years. A sufficient supply of such men is the first essential of good university work.

The rule to be followed in keeping up a college faculty differs from that which should govern in the university. In the college, the fac-

ulty must be full enough to teach all the branches of the course, for the college course fails if any essential part is omitted. It may be proper to select a college professor, the best that can be obtained at the time, and regard may be had as well to his skill in teaching as to his scholarship and scientific acquirements. In the university, on the other hand, only those should have a place in the corps of teachers who are eminent in their departments. A university should not attempt to teach all things. No one school can do that well. Better that the professor's chair in the *university* remain vacant than that it be occupied by even a second-rate man. Some schools are too hasty in their ambition to be universities. We laugh at the ridiculous bombastic college at Monohypos, where one man does all the work of a full faculty,—but this is no more absurd than the university at Polyhypos, which proposes to give thorough instruction in all the sciences, and in all the art and literature of ancient and modern times by the same team of professors who are engaged in hauling a body of under-graduates through, or over, the general college course.

The other essential for the existence of good university work is students,—real students. The student prepared by the liberal course of study must add to this a desire to master the professional or other course which he enters upon at the university. The number of students in this country who have this preparation and this wish seems to be quite limited,—but it does grow; there is a constantly increasing number who aim to become masters of their science. They cannot be satisfied by merely passing an examination. There is also an increase in the number of those who are studying ancient or modern classics, with a thoroughness that was rarely attempted thirty years ago. The number who go to Europe to pursue their studies in the great schools of science or art is increasing year by year.

All signs show that university work in this country must increase within the near future. Where the great schools will be located, whether the advance will be in the old schools that have done so much already, whether newer institutions may surpass any that now exist,—these are less important questions. The important thing is to recognize what must be the work of the university. If we can apprehend this definitely, we can help by removing some obstacles.

SELF-CONSCIOUSNESS IN EDUCATION.

BY REV. E. T. JEFFERS, D.D.

It may be taken for granted that Pestalozzi's idea of education is correct ; viz., "The natural, progressive, and symmetrical development of all the powers and faculties of the human being," and also that much that passes for education is unworthy the name and fails of this end ; and, on the other hand, that all education is, at best, relative ; that we never reach absolute perfection ; that that method and course of study may with comparative accuracy be called educational which gives the strongest impulse in the right direction and carries the student the farthest on his way.

With a bare mention we may lay aside the two popular meanings of self-consciousness, both that which makes it equivalent to egotism and also that which describes the power which we would prefer not exercising,—the power of keeping one's self bodily before his mind when he would much prefer forgetting himself.

Without attempting to fix, except while we are discussing this subject, the meaning of this much-defined term, let us agree that it is the power of introspection. Consciousness, as defined by Dr. M. Hopkins, "is the knowledge by the mind of itself as the permanent and indivisible subject of its own operations," (*Outline Study of Man*, p. 106). Self-consciousness is used in this paper about as Dr. Porter uses consciousness : "The power of the mind to know its own acts and states," (*Human Intellect*, p. 83). It is called often, figuratively the inner sense, sometimes the seventh sense. Sir William Hamilton says, "Self-consciousness is the power by which we apprehend the phenomena of the internal," (*Metaphysics*, p. 401). By self-consciousness, then, we can agree to mean the voluntary and direct knowledge of self, the power to know psychical phenomena directly and intentionally. If I am asked, "Do you admire Longfellow as man and as poet ?" because I have the power of introspection I answer confidently, "Yes, I do." If asked, "Do you understand Emerson ?" I can say, "Not always." But I have my own opinion of Emerson, something like that of Socrates concerning Heraclitus : "What I understand of him is very good, and I'm willing to believe the same is true of what I do not comprehend." Again you ask, "Do you know the difference between right and wrong ?" I inquire within. I know

the difference between utility and inutility,—that is not it ; also, between beauty and ugliness,—that will not meet the conditions of the question. But in my mental possessions I find a knowledge of the difference asked for, and also the difference between this difference and the other differences. I know all thoughts and feelings, all mental acts and states, before they find any expression whatever, and know them by the power we agree to call self consciousness. My aim in this paper shall be, not to defend this definition, nor to enter into any abstruse discussion of psychological facts or questions ; but giving self-consciousness its place as one of the powers of the “human being,” which must be developed in education, show what part it plays with teacher and pupil, and also, practically, suggest some means and methods for its development.

I.—CONCERNING THE POWER ITSELF.

Since this power of direct and voluntary self-knowledge is that by which we gather the facts of psychology, some might suggest that it would be as well to make this a discussion of the value of psychology in education. But attention is directed specially to the power rather than to the material or the products. While it will be impossible to avoid reference to the science of mind and the phenomena of mind, yet we shall not forget that we are to examine particularly the power that is indispensable in furnishing the facts on which the science is built.

1. Self-consciousness is a power of the human mind. We are endowed with the ability to know psychical phenomena just as we are with power to know physical phenomena. “Introspection is observation, differing only in that the phenomena observed are subjective states and feelings, and not objective states and changes in the felt. We observe changes of feeling no less than changes in the external ; and whatever place is assigned to observation in scientific methods must, on this ground, be assigned to introspection,” (*G. H. Lewis: Study of Psychology*, p. 82). The same author says, again, answering Comte’s assertion that the human mind is incapable of observing its own phenomena, “How, then, in the name of common sense, have we become aware of the existence of mental phenomena?” Let those who will, puzzle themselves with the question, “How can the mind think itself thinking?” the fact remains, that among the potencies of the soul is one which enables it to investigate and take full cognizance of its own acts,—its thoughts, emotions, and volitions, and in general its states. For the present let us be positivists, and be satisfied with facts without attempting

an explanation. Further, the question, whether or not every psychical state or act is preceded by a nervous change, or followed by one, or accompanies one, it is not necessary to discuss or attempt to answer. In whichever way it shall be answered, when a demonstrated answer is reached, it will not affect our faith in the fact that this power is possessed by the human mind,—the power to know itself.

It should be remarked, by the way, that the field for the exercise of this power is narrower than it was supposed to be by the ancients, who thought it sacrilege to dissect this mortal frame, and who appealed to self-consciousness instead of to physiology to decide questions concerning the action of heart and lungs. We may add, too, that the observations of this introspective power are steadied and helped and corrected by modern accurate physiological investigations. Yet there remains a field purely psychical, and a mass of facts of which we would be utterly ignorant but for self-consciousness, and for which, and for the accuracy and nature of which, we must always appeal to this unique power.

2. This power, like all other natural powers, is reliable ; in its own sphere, infallible. If the facts of self-consciousness are not distinct in outline, they gain in certainty what they lose in definiteness. If we do not question the facts of vision, of taste, of touch, much less can we doubt those of knowledge and feeling. To discredit the senses threatens all the physical sciences ; to distrust consciousness is to take the foundation from all knowledge. When the world becomes seriously skeptical as to the reliability of self-consciousness, we shall be universally, and in the grossest sense of the word, agnostics.

3. Just like other powers, self-consciousness is dwarfed by neglect and developed by legitimate use. To gain knowledge, develop the mind, enlarge the sympathies, strengthen the will, to furnish material for the exercise of the faculty, is one thing. To exercise the faculty on this prepared material, quite another. The world is full of beauty ; yet, in the multitude, the æsthetic faculty is unused and undeveloped. So we find men with well-stored minds who yet have never exercised this self-knowledge. Some, and not a few, like Comte, who have spent much time in using their powers of observation of other things so exclusively that it is possible for them to deny the existence of a power of introspection. On the other hand, it can be developed to a degree so disproportionate that sense-objects will be denied their true relative place, and the man, however excellent in character and purpose, will be manifestly one-sided. Socrates, *e. g.*, who could gain neither pleasure nor information from nature, has left us the most thoroughly analyzed products of introspection.

Kant makes this power the characteristic of rationality. He says if a pig should ever reach that degree of self-consciousness that would enable it to say, "I am a pig," and understand the phrase, he would no longer be a pig. Whoever knows himself most thoroughly rises highest in the scale of rationality.

II.—CONCERNING THE RELATION OF SELF-CONSCIOUSNESS TO EDUCATION.

1. Recurring to the idea of education with which we started, it is evident that this, being one of the "powers of the human being," must receive attention and care enough to insure its "natural and progressive development" in order to the symmetrical product which education yields. Any course of study that does not provide specifically for the training of this faculty is defective, if it pretends to educate. The institution that offers any such partial course cannot be called, properly, educational. Students, trained however thoroughly in other respects, have been defrauded of an element of culture who have not been subjected to that course of mental discipline that develops self-consciousness. The investigation of physical phenomena, important as it is,—and we are only beginning to estimate it rightly,—requiring the exercise of perception, memory, imagination, comparison, analysis, and generalization; assisting as it does in the exploration of the border-land between the purely material and the purely psychical; important as it is as an element of education, can never become the exclusive educator. Nor is it, nor can it ever be, more important than the investigation of mental phenomena and the consequent development of self-consciousness.

Schools which do not profess to educate, but only to train their pupils for some special or technical work, are, of course, under no obligation to develop the whole man. For many professions no special need is felt for this faculty in any great degree of strength. Yet, whatever the technical character of the school, from a theological seminary to a machine-shop, it should be pervaded by an educational atmosphere. Every teacher of every sort should inspire every pupil with a desire to be something more than his profession demands, to be broadly complete rather than narrowly successful. No university or college can afford to allow men to carry its degrees without some considerable development of self-consciousness.

2. The educator himself should have this faculty in perfection, both because he should be no mere specialist, no one-sided man, but a many-sided one; educated, when judged by Pestalozzi's standard; and also because this faculty is of special service to him in his professional work. Dr. Porter (*Human Intellect*, p. 11) makes the habits and

knowledge which come from intelligent self-study the source of answers to questions the profoundest and most difficult that the true educator meets in his important work. It lies on the surface to say that the teacher that best understands himself will take the most intelligent view of his pupil; and the conclusion is easy, that voluntary self-knowledge is the characteristic of the successful instructor, and development the first principle of pedagogics, and an essential feature of every normal school and normal course. The ill-taught teacher fosters peculiarities in his pupils and overlooks essential faculties; suppresses worthy aspirations and encourages little ambitions; and if there is any force in the teacher, makes every one of his graduates ten-fold more the child of one-sidedness than he is himself. He has hobbies, pet notions and methods. He is merciless on everything that does not fit into his queer mould and sows broadcast seed that raises a harvest of disagreeables and incompetents,—educational cranks.

The teacher, on the other hand, with self-consciousness well trained, perceives the defects in himself and corrects them. This experience is of service to him in correcting the errors and developing the excellencies of his pupils, but of infinitely more use in giving him patience and perseverance in his instructions, and in making him charitable and just in his treatment of those under his instruction. The products of his instruction will not be perfect, but they will be less imperfect than when he found them, and with a working model before their minds and a vigilant observer within that will insure future progress toward ideal beauty and excellence.

III.—CONCERNING THE DEVELOPMENT OF SELF-CONSCIOUSNESS.

I. To the question,—which is of importance if the propositions laid down thus far are true, How can this power be developed? the most obvious answer is, By use. To increase the power of introspection, introspect! Examine persistently and systematically the intellects, emotions, and volitions of your own experience. Take an account of stock, mentally, often. Let time,—a fair proportion of time,—be given to this exercise. Let psychology, with this object, have a place beside the other ologies. Let it have as much attention as any, and more than most of them; more than physiology even, because the soul is more characteristic of the man than is the body; especially more, because in all the others the other faculties of the mind are directly exercised, and in this alone is the power of self-knowledge used directly and by intuition.

I have referred to the study of psychology. It is necessary to say

in this connection, that it is possible to carry a class through a text-book in this science with as little advantage to this special faculty we are discussing as would be gained from the use of a text-book on geology. A well-educated educator will develop in his pupils more self-knowledge in teaching mathematics than a mere hearer of recitations will in his pupils, with the best text-book on Mental Science. Where text-book, lectures, and oral instructions are so used as to provoke the exercise of the student's own powers in observing and verifying facts, the subject is interesting, and is pursued for its own sake and from the stimulation of growing powers.

Children cannot be taught too early to observe their own mental states, though they should be taught judiciously, lest they follow an abnormal growth of this power, which is as unsightly and as hurtful as any other disproportionate growth. The older, maturer, and better trained the minds of the pupils, the more attention they should be required to give to subjects that will directly exercise, and naturally and progressively develop self-consciousness.

2. This direct use of self-consciousness attains its best results when accompanied by an indirect use of it, in the study of the products of other minds; but those products, in order to contribute to the vigor of this faculty, must be interpreted,—estimated by your own mind. Without a vigorous use of self-consciousness, the study of the psychical products of others will degrade one to the level of an encyclopædia. On the other hand, a persistent use of self-consciousness, without a large acquaintance with others' thoughts, will give no reliable knowledge of mind in general, nor of the thinker's own mind even, but only a magnified view of his own most prominent mental characteristic. Returning from the contemplation of other minds, as seen in their varied products, he views his own in the light of his observations. Thoughts, motives, feelings, impulses that have been under the shadow of greater, *i. e.* more fully developed ones, are now brought to view. Vividness of outline is now given to ideas that before were of the vaguest description. By comparison, the mental facts that are universal and characteristic of the race are distinguished from those that are personal and accidental. "By striking off what is individual in each, we may get at a conception of what is common to all By including various races of men, we rectify in some measure the deficiencies inherent in introspection and reach the solid data for a general science," (*G. H. Lewis: Study of Psychology*, p. 97). Yet, after all, the data given us for our science are our own, and are given by self-consciousness, directly, though gained elsewhere indirectly.

Some studies may be named that are of special assistance in this direction :

1. In General Literature : The ancient and modern classics of all nations contain the best thought of the best minds. The survival of the fittest has saved us the trouble of weeding out the worst. Whoever makes the gems of general literature his own, knows himself in the light of all thought.

2. The Study of Language, and especially of languages : What better revelation of a nation's mind than in her language? How better trace the growth of intellect and emotion than in the coining of new words and in the change of meaning of old ones? The thought of old nations has been stereotyped for our study, and thence the thoughtful draws much self-knowledge. A comparison of languages is a long step toward the induction that reveals mind to itself.

3. In poetry we are permitted to look into the heart of humanity. The intelligent study of poetry reveals to us ideas of truth, honor, love, devotion, patriotism, beauty, justice, which may have lain dormant in our hearts hitherto, which it needed these words of the seers of the generations to discover and bring to the light, and which we now see as our own. The gross statement of the result of such study is, the student gets, acquires, or adopts ideas from the poet. The true statement has been given,—where the study is rationally directed, he knows himself better. His power of self-knowledge has been quickened and developed, and this is the best and most permanent result.

4. In the study of philosophical history, in which the student is led behind the scenes and permitted to look on the motives that lay behind wars and revolutions, and to study the personal feelings that were active in the formation of creeds and constitutions, this power of introspection receives large accessions of strength. While discovering the common clay in the hero, marks of total depravity in the Christian reformer, we find redeeming features in the "wisest, brightest, meanest of mankind;" and we find these characters, in large print, what is scarcely legible in our own hearts till after the reading elsewhere, thoughts and feelings that were always our own, though not seen till now.

5. None have been better assisted in developing the power of self-consciousness than those who have used intelligently the proverbs of Solomon and the Epistle of Paul to the Romans. Certain phases of our being, certain psychical facts, moral and spiritual, effectually hid by our pride, are brought out here distinctly and forcibly. A healthy

tone is given instantly to this introspective power when it breathes the air of these keen, crisp sentences.

6. One study, which in some respects deserves the highest place here, but which has heretofore received less attention than it merits in our institutions for higher instruction, is the *History of Philosophy*. In every generation there have been men,—earnest-minded, patient, thoughtful, strong men, who have studied the problem of the universe and have given us, in philosophical systems, the results of their investigations and meditations. These are sometimes referred to as cobwebs which should be brushed from the mental walls by all good psychical housekeepers; as mists that obscure the clear light of the nineteenth-century scientific sun; as fine-spun nonsense that belittles the mind that attempts to follow their threads of thought; and young men are exhorted to give their time to something useful, *i. e.* something that will yield a return of six per cent., rather than waste precious hours and years on these effete theories. One who has given us the most readable history of these systems, and knew them well, says of his history: This may be the history of mistakes but not of follies; and adds, we trace in their defects the cause of future victory. I do not refer now to the many advantages gained by a study of the *History of Philosophy*, as I did not to the profit of the other studies named. I say nothing now of the charity which this gives us for noble thinkers in all lines of investigation; of the gratitude developed when we see how much advance we have made on these old worthies,—gratitude to them often, for our position where we discover that we see farther than they did only because we stand on their shoulders; of the satisfaction of discovering that many of the wonderful new theories of things are only some old Greek's cast-off garments patched up with actual discoveries in physical science,—new cloth on old garments, with the traditional consequence; of the pleasure of discovering Hegel an eclectic, Leibnitz a Pythagorean, Schopenhauer a sophist, Darwin a son of Democritus; of the stimulus given to our thought by contact with the thought,—the best thought of the generation, the thought of

“The great of old,
The dead but sceptered sovereigns who still rule
Our spirits from their urns.”

I refer to it here chiefly to show that it increases the power of self-knowledge. We read our own thoughts in the light of these brilliant speculations; we learn the possibilities of human thought both in the errors and in the correct notions of these Greeks and Germans. No theory of theirs, however wild, but has its possibility in every

mind. We may speak of the peculiarities of the Greek mind, of the Hindoo and of the Teutonic mind, but they are all human minds; and we must say in a sense different from that in which it was first uttered, "Nothing human is alien to me." So in each system of philosophy, as in the large maps of special parts of a country,—parts scarcely noticed in the general map,—we find some part of our own minds fully explored, clearly marked off and described; nothing down on the chart which is not in the mind, but much that but for the service of one whose theories are regarded as fit only for an intellectual museum, would never have been brought above the horizon of self-consciousness; but much that is of value to us because it is ours, and of great practical value when developed with other powers, discovered and used in accordance with their nature. So we may say, without exaggeration, that no man knows himself who does not know Socrates, Plato, and Aristotle; Des Carés, Spinoza, Leibnitz, Kant, Hegel, Van Hartman, and Spencer; Locke, Reed and Hamilton; and the other thinkers whose theories mark stages in the development of human thought.

I cannot close without emphasizing this notion, already expressed, that whether the study of these branches, and especially the last, shall yield only dry bones that no prophet's voice can inspire with life or clothe with flesh, or shall awaken living thoughts that can never die, will depend on the method and spirit of the instructor. While all, even the Bible itself, can be so studied as to make men narrower and more bigoted, all can be studied so as to teach us that while in the presence of God we are utterly insignificant, yet essentially we have powers capable of infinite results under a development that is natural, progressive, and symmetrical; and, further, that in order to insure a development that shall be natural, progressive, and symmetrical, there must be, first in the teacher and then in the pupil, a clear, vigorous, growing self-consciousness.

COUNTRY SCHOOLS.

BY HON. JAMES P. SLADE, ILL.

When it is remembered that all the education received at school by the great majority of the youth of the country is obtained in the public schools, and that more than three-fifths of this number are enrolled in the country schools (in Illinois the number is 437,220, against 266,821 in graded schools), no apology is needed for devoting this paper to a discussion or consideration of this class of schools. In speaking of country schools I shall naturally speak of such country schools as are found in Illinois (I presume their characteristics are much the same all over the country), and so, at the risk of stating what some know very well, I will in a few words tell what our school system is as established by law, so far as it relates to the country schools, in order that we may understand the frame-work, so to speak, in which the schools are set.

In Illinois we have what is known as the district system, the limits of the district being fixed by the board of township trustees of schools elected in every school township, which is the same as a congressional township, and these limits can be changed only by the trustees upon petition from people or districts interested. These districts vary much in regard to size and population. In some the population is so large that two or more teachers are employed, and the schools are well graded. It is not of this class that I wish to speak. I intend to confine myself to such schools as have but a single teacher. In such schools we find anywhere from five to eighty pupils, with an average enrollment for the year of about forty and an average daily attendance of about twenty-five. The school affairs within the district are managed by a board of school directors, three in number, one being chosen each year. They employ any teacher they choose, if only the teacher has a county or state certificate; they pay such wages as they please; they adopt text-books, and rules and regulations for the government of the schools; they may dismiss teachers for incompetency, negligence, or immorality; they may suspend or expel pupils for gross disobedience or misconduct; they may levy taxes for the support of schools, not exceeding two per cent., on the taxable property of the district; they may determine what branches shall be taught, subject only to the limitation of the law,

which says that the schools shall be for instruction in the branches prescribed in the qualifications of teachers, to wit: Orthography, reading in English, penmanship, arithmetic, English grammar, modern geography, the elements of the natural sciences, the history of the United States, physiology and the laws of health, and in such other branches, including vocal music and drawing, as the directors, or the voters at the annual election, may prescribe.

We have, then, in each district a school-board with most ample powers of control and of taxation, although there are a few sparsely settled districts in which the taxable property is so small in amount that the two per cent. tax will not yield a revenue sufficient, when supplemented by the income of State tax and the different school funds, to maintain a school for eight months in the year. The possible course of study, too, is as extended as could be asked; in fact, under the same law, some districts with pupils enough to warrant it, do maintain high schools every way worthy of the name.

The law gives the people the power to raise money to build and furnish school-houses. The law makes the minimum school year 110 days, and the directors have the power to keep the school in operation nine months. The schools are open to all residents between the ages of six and twenty-one. Such are the conditions surrounding the country school in Illinois. That the improvement made in these schools during the past twenty-five years has not kept pace with that made in city schools will, I think, be admitted by all who know the facts regarding their condition. As a rule the graded schools are much superior to the ungraded in all the essential elements that go to make up a good school. There are evidences of this superiority on every hand. Parents, when able to do so, eagerly seek to secure for their children the advantages of the graded schools, by sending them to neighboring cities and towns, paying for their tuition, and often for their board, or sending them back and forth several miles each day. Another evidence is, that when a country district school is better than the graded school near by, the fact at once becomes a subject of general comment, just because it is unlooked for,—is, in truth, the exception to the rule. Again the difference is seen when pupils from the country districts enter graded schools. Although it is found that they have advanced further in the text-books used than pupils of the same ages in graded schools, the discovery is soon made that when judged by what they are prepared to do, rather than by the number of pages that they have been over, they are lacking in the necessary preparation to enter classes composed of pupils of the same ages with themselves. The causes of this difference be-

tween graded and ungraded schools are not difficult to find. Let me briefly call attention to some of them.

In some districts the population is sparse and the amount of taxable property small; so that taxation up to the limit fixed by law, and supplemented by the proceeds of the State tax and the school funds, does not afford, in many large districts, adequate support for a school of high character, nor for a school of any kind, for scarcely more than the minimum term. As the population has increased in many localities, the people seem to think more of having a school close by their doors than of having a good school, and large districts able to sustain excellent schools have been split in two, and a multitude of small districts, each barely able to sustain with difficulty a poor school, is the result.

Another potent cause of the inferiority of ungraded schools, as compared with graded, is the frequency of changes of teachers. Five per cent. is probably a small estimate for the changes made during a school year in the teachers of graded schools, and probably not more than ten per cent. are changed, comparing one year with the next. In Illinois thirty-seven per cent. of the teachers are replaced by other teachers during the year. This is the average for the whole State. One county superintendent writes that one school changed teachers four times during a seven months' term; and he adds, needlessly perhaps, "they didn't have much of a school after all." Another superintendent says: "Some schools have three terms a year, and a new teacher each term." Another: "It is a rarity for a teacher to teach in the same district two or more successive terms."

The evils of such frequent changes are apparent. It is simply impossible for one teacher to take up, without break or delay, the work in the school-room just where his predecessor dropped it. It takes time for him to adjust himself to his new relations; it takes more time for him to find out what his pupils already know, and how to classify them, for it is rare that he will find any trustworthy record of what the former teacher has done. It takes still longer for him to find out something of the capacity of his pupils, and so to adapt his instruction to their abilities and peculiarities as to secure valuable results. With all this pioneer work, not much is likely to be accomplished in a term of three or six months; and, if time for such work must be taken by a new teacher each term, it ceases to be strange that the country schools do not accomplish more,—it is rather a wonder that they do so much.

Another reason why the country schools are not more useful,—a reason which, in part, is a natural result of the frequent changes of

teachers,—is, that usually they do not have even a semblance of a course of study. The teacher who stays but one term in a school, no matter how excellent a teacher he may be, can do no more than make a beginning; and the next teacher has different plans, or none at all, so that much of the teacher's strength is wasted in ill-directed efforts, and much of the children's time is frittered away in false starts and in retracing their steps. This would be bad enough, if the only purpose of the school were to teach the children certain facts and rules, to name the letters and "do the sums;" but when we reflect that the great purpose of education is the thoughtful and systematic training and developing of the pupils' faculties, the slipshod, haphazard way of conducting a school, with no plan and no well-defined purpose, seems sadly inconsistent. The reasons given above for the inferiority of country schools all combine to make such a school a less desirable place for a teacher than a graded school. Teachers who have spent years in study, and have had both professional training and experience, and have made teaching their vocation, seek better wages and a more permanent position than they can get in a country school. Teaching is their business, and they wish to be regularly employed more than six months in the year. Even when the pay is no better, the fewer and better defined duties of the graded school make it a more attractive field of labor than the ungraded school. Besides, in a graded school a teacher has a better chance to measure himself with other teachers; his work is usually supervised and reviewed by competent judges, and he is constantly stimulated by knowing that his work will be carefully compared with that of his co-laborers. The natural result is that vacancies in the village and city schools are carefully looked after by the teachers in the country; the board of education can generally have its pick from half-a-dozen applicants for the same place, usually all teachers of experience; while the board of directors of a country district, though it may have several applicants for the school, will seldom find among them persons of well-established reputation as teachers. The multitude of young men and women who drop into teaching as a make-shift, who keep school a term to get a little money while waiting for something to turn up,—the great number of worthless teachers whose only chance to secure a school is to offer their services so low as to defy competition, who do not even have the hardihood to expect to be wanted a second term in any place, and whose work will not bear the light of intelligent criticism,—these almost all find employment in ungraded schools; and so, to all the disadvantages of country schools there is added this greatest of all. that far too large a proportion of

the teachers employed in them,—being themselves comparatively ignorant, inefficient, and totally devoid of more than a passing, selfish interest in their work,—do little or nothing toward giving the children unfortunately under their charge the “good common school education” guaranteed by the State.

Having for ten years held the office of county superintendent of schools, and having during six of these years given my whole time not occupied in the discharge of other duties pertaining to the office to the visitation of schools, it may not be out of place for me to give, in this connection, some illustrations of school work obtained from personal observation. I was surprised to find, early in my experience in visiting and examining country schools, that very many of the pupils (I should say a majority) were attempting work for which they were not prepared. The main thing with a majority of the teachers seemed to be to have the words of the text-books committed to memory and recited, more attention being given to the words than to the thoughts they were intended to express. As a result the reading exercises were mechanical and monotonous, and the other recitations dull and wearisome to both pupils and teacher.

In one school the first question I heard asked in mental arithmetic was: “If three apples cost twelve cents, what will one apple cost?” The pupil addressed answered: “If three apples cost twelve cents, one apple will cost three times twelve, which are thirty-six cents.” The other members of the class did not express any surprise at the explanation and answer until the teacher said: “No, that is not right; that is the way you did the examples yesterday in the last lesson; but in doing these you must not multiply, you must divide.” And so on with all the recitations,—many words, and but little interest or thought. After school had closed I took occasion to show the teacher in what respects I thought she had failed,—that the pupils should not have been told to multiply or divide, but that they should have been led to think whether the one would cost more or less than the three, and to determine for themselves whether they should multiply or divide. She saw her mistake, but, said she, “I never before realized that I was doing such poor work. I had no difficulty in obtaining a certificate, and I have taught this school for several years, giving general satisfaction to parents and pupils, and I really thought I was a pretty good teacher.”

In another school, taught by a gentleman who was a good scholar, I found a class of girls nearly grown, who had laid aside their ordinary reading-books and were, during their last year in school, reading their United States History in course, and were then reading about

the Great Rebellion. After one had read a sentence explaining some movements of the Union army, containing these words, "It was feared the rebels would obtain possession of the heights commanding Washington," I took the liberty of asking them what they understood was meant by the "heights commanding Washington." I wanted to see if they knew that just across the Potomac, opposite Washington city, were Arlington Heights, and that the enemy, once in possession of these heights, could bombard the city therefrom. They seemed much surprised to hear such a question. None answered. I continued, "You have been reading history all winter, I understand, and you must have some opinion regarding the meaning of these words. They certainly mean something. Please tell me what you *think* they mean." After considerable urging, one girl signified her willingness to answer, and said, "I think it means that General Washington commanded." Evidently they did not realize what they were reading about, and had not much definite knowledge of the place occupied by General Washington in the history of this country. I remember that the teacher and school directors, who had gone with me to the school, were surprised and annoyed at the little understanding the pupils had of the language they used. The teacher, after hearing other classes and pupils recite,—all of whom seemed too far advanced in their books, using language they did not comprehend,—called for his class in primary geography. The teacher asked the questions, and the pupils gave, with considerable gusto, the answers given in the book. When the lesson was ended, the teacher looked at me with a look of satisfaction, as much as to say, "Well, they know what they are about, if the other pupils did not," and asked me if I would like to ask any questions. I gave an affirmative answer. Most of the questions asked were like the following: "Which is the most populous of the Eastern States? which of the Western States?" etc. I therefore repeated the question, "Which is the most populous of the Western States?" They promptly replied, giving an answer in a full sentence, as was proper. "Ohio is the most populous of the Western States." Good. Now, can you tell me what that word "populous" means? You say Ohio is the most populous. Now, what does that mean? They looked at me in astonishment. The teacher, directors, and school, all waited intently for an answer. None came. I then said, "Now you have learned that Ohio is the most *populous* of the Western States, but you don't know much about that State after all, if you do not know what that word means. Well, what do you think it means?" Finally one boy put up his hand, signifying that he would venture

an answer. I said, Well, what do you think it means? "I think it means they raise the most wheat and corn there." Of course all were surprised that none of the class knew the meaning of the word "populous." But the fact is not at all surprising. The word was evidently a new word to them, and was simply one of a large number of words used which had no definite meaning to them. They were so in the habit of repeating words and definitions they did not understand that there was special reason why they should know the meaning of this particular word. Had they been taught to understand and get the meaning of new words, as they occurred in their lessons, they would have inquired as to the meaning of this new word when learning or reciting the lesson in which it occurred.

After the close of school one of the directors said to me, "I am quite surprised to find that the pupils know so little of the meaning of the language of the text-books, and that the teacher has so neglected to teach them the meaning of the words they use daily. We have all had our eyes opened to see the true character of our school by your visit. I would not have missed what I have learned about our school to-day for many times what it costs to pay you for coming. Why did you not come earlier? Our winter school is now nearly over, and the good effects of your visit will be lost, as our teacher will not teach here next term." I replied that I could not well be in two places at the same time; and as it was necessary to devote my whole time to the visitation of schools, to visit them all even once, some must be visited late in the season. He saw the point, and said there ought to be two superintendents for so large a county, in order that each school might be visited by the same superintendent twice each year. Many times I found pupils committing and reciting page after page of a text-book in geography, repeating, in answer to the questions in the book, "Geography is a description of the surface of the earth," and "The earth is round, like a ball or orange," who not only could not define, but did not know the meaning of the words "surface" and "description," and who were quite certain they had never seen any part of the earth which was "round, like a ball or orange." And when asked to point toward the earth, some said they did not know where it was, some pointed upward, and in one instance several pointed to the globe lying on the teacher's desk, saying, "There it is." In another instance, after the class had recited the lesson assigned from the text-books, the teacher asked such questions as: "In what country do you live? Of how many States is it composed? In what State do you live? In what county do you live?" etc. When they had finished answering these questions promptly

and accurately, I asked them if they knew how large the county is in which we lived. They answered they did not. I asked them if they would like to know. Upon receiving an affirmative answer, I told them I would try to help them to understand how large it is. As they were living only seven or eight miles from the county seat, I asked if they had been there. Most of them could tell me how many school-houses they had seen, and about how far apart they were. I then told them that I usually visited two each day; that I had been traveling all winter, and had not yet seen all in the county; that there was one every few miles; and that I could go in one direction twenty miles and still be in the county, and in another direction fifteen miles, and in another direction still twenty miles; and that it took me almost all of the year to visit all of the schools once. After thus talking with them until they had become considerably interested in thinking of the size of the county, I said to them, "Well, now you know about how large St. Clair county is. Which do you think is the larger, St. Clair county or the State of Illinois? And the class answered, "St. Clair county."

To give a single illustration more: In the geography used in another school there were given on the maps six of the principal cities of each State. The pupils were required to learn and name these principal cities for each State. After the recitation was concluded I asked the children to tell me what a city is, and to tell me of one they had seen. Most could define a city and name one they had seen. When I asked them how many cities there are in Illinois, they said, Six. How many in New York? Six. Do you not think there are more than six? No; six.

In the same school, located eight or ten miles east and in sight of St. Louis, I asked the direction to that city, and how long it would take a man to drive there with a horse and carriage? They gave the correct answer; but when asked the direction of New York and how long it would take a man to drive there, they gave the direction correctly, but thought it would take three or four hours to drive there.

I know very well that the work of our best teachers might be condemned if judged by the blunders made by some of their dull or stupid pupils, but those to which I have referred were made by whole classes of bright boys and girls, and were the legitimate result of a lack of skillful teaching. Their teachers were mere school-keepers, who did little more than hear the pupils recite the words they were required to commit to memory. Do any say that the statements made and incidents given indicate the condition of only a few schools,

which are but exceptions to the rule? For the sake of the schools I wish it could be truthfully said that such so-called teaching is rare. The truth is, it is much more common than many believe, but the fact should not surprise any who reflect that most of the teachers entering the schools each year have a very limited education, and no special preparation for teaching. We get each year some teachers from our high schools and academies, some from our colleges and seminaries, and all our normal schools are doing what they can to furnish us with teachers. But when we have received each year, from all these sources, all we can get, not more than one-half, possibly not more than one-third, of the vacant country schools are supplied; and the other half or more are taken from the country schools themselves, in which they have generally received only elementary instruction. They are excellent raw material from which to make teachers, but until they have had further education and special training, or have acquired experience, they are not such teachers as are needed in the public schools. To say otherwise is to hold either that there is no science and art of education, or that by some intuition or instinct a knowledge of all this comes to the young teacher as he crosses the threshold of the school-room,—a position so far contrary to all theory and experience that it is absurd. The practical question is, Have the States any duty in the premise? In their constitutions they have deliberately committed themselves to the theory that the State should undertake the public education of its children. By the laws enacted they have established systems of public schools. For the support of these schools the people are taxed. The State practically compels the people to educate their children in the public schools; for private schools supported by tuition fees cannot live by the side of free schools, except in large cities and towns, and but few people can afford to pay their school tax and at the same time pay for their children's tuition in private schools, especially if, as is usually the case, they must bear the expense of keeping them at school away from home.

Having done thus much, the next step seems, not only logically but imperatively to be, to see that good teachers are provided for the public schools. The State has already done something in this direction, but the facts that I have given show that it is necessary for it to do more. If the State takes the people's money it is bound to see that, so far as possible, the people receive full value therefor. If the well educated and carefully trained teacher is worth twice as much as the ignorant, untrained teachers, the State should take effective measures that the school-money be not wasted upon teachers of the

latter class. If the State, by increasing the number of its normal schools, can, with only a comparatively small outlay of money, increase largely the number of trained teachers, and not only that, but through the influence of these do much to raise the character of the teaching in every neighborhood where they are employed, then it should provide for training teachers in this way, instead of training them in the school-room with much greater expenditure of money, and of what is worth more than money,—the children's years of study. But under the most favorable circumstances it will be a long time before we get a well-trained corps of teachers in our country schools. The people must be led to see the need of such teachers, and what is equally essential, must learn that such teachers should be paid higher wages. And, meanwhile, other agencies must be evoked and made to contribute to the end in view. Supervision of the schools of a city is regarded of first importance, and is carefully provided for; but there are reasons which make the supervision of country schools essential that do not exist with reference to city schools. The country school is isolated, so that the teacher has little or no opportunity to compare his work with that of other teachers, and no one to whom to go for advice. The country school has usually no course of study; and, more than all, the country school-teacher must teach the whole round of branches from the First Reader to algebra and botany, and children of all ages from six years to twenty-one. Compared with this complex task, the city teacher's work is simple. If he needs the assistance of the constant supervision of the principal, of a visit now and then from the superintendent, and of an institute every month, when he has but a single class of pupils or at most two of about the same age and receiving instruction in the same branches, the country teacher has ten times more need of the help that he may receive from practical supervision.

There would still be much need of school visitation if there were a competent teacher in every ungraded school. "Even the best masters will not do so well without this aid as with it," is the opinion of the English Commissioners of Education. "A school," says Everett, "is not a clock, which you can wind up and then leave it to go of itself." But what makes the necessity of supervision still greater, and improvement of the country schools almost hopeless without it, is not merely the fact that the greater part of the teachers have so little education, but the fact that they have had no training for their duties; and the further fact that so soon as they have acquired a little experience as teachers, they quit teaching and are succeeded by a new corps, as poorly educated and without special training. If

the day of miracles is past, it is folly to expect that a young man or woman with but little knowledge, with no acquaintance whatever with the principles and methods of education, and no one to advise him except the average school director, can take a school with forty pupils pursuing seven studies, perhaps more, in twenty or twenty-five classes, and teach with any system or with any great profit to the children. When we add to this that this teacher is changed for another equally lacking in qualifications at the end of each year, very likely at the end of each term, it is no wonder that the pupils make but little progress from year to year ; that they do not receive any mental discipline ; do not learn how to study, and do not form careful habits of thought.

Accompanying good school supervision is the teachers' institute. From what I have seen and learned of teachers' institutes, I am convinced that their efficiency and influence for good upon the people and upon the teachers, and through them upon the schools, depend very largely upon the intelligence shown by the county superintendent in planning the work and in adapting it to the needs of the teachers ; the best arranged, best conducted, and most largely attended in proportion to the number of teachers employed, being almost invariably found in the counties in which there is the best supervision. In short, I believe it to be true, as another has said, that "the institute of a county is a fair index of its educational rank."

The commission sent to this country in 1876 by the French Government to examine into and report upon the school systems and educational methods of the United States, in their report say : "The characteristic trait of the country school is the absence of regular organization. The courses of study in country schools are still at their first attempts. There is no uniformity whatever ; every teacher makes his own course, and prescribes its duration."

It seems like repeating the letters of the alphabet to say that a school should be classified ; that there should be a plan of work so arranged that pupils may have regular times for recitation and for study ; that there should be a gradation of classes, so that a pupil may proceed from one to the other in an orderly way, each class being the natural antecedent of the class that follows it ; and that there should be a record made and kept of each pupil's work each term. But it is just this elementary work that still needs to be done in the greater number of the country schools.

The good results of carefully grading the country schools would be many. A great deal is lost in these schools because of the irregularity of the attendance. The average daily attendance in the cities

is about seventy per cent. of the annual enrollment. The average for the State is only sixty-one per cent.; so it is probable that the average for the country schools is not above fifty-five per cent. If each pupil knew that he belonged to a class, and that his staying in that class would depend upon his regular attendance, he would be much more anxious to be present every day. Parents, too, if they understood that their children would each term and year make regular progress in their studies, would more readily appreciate the necessity that their children be in school all the time, and would not take them out or let them stay away without good cause. Again, when a pupil goes over the same ground term after term, he loses his interest in the school, and his parents fail to see the advantage of his going to school any longer; so he drops out, having received very little benefit from the public school. A definite course of study, to be completed in a certain time, would keep such pupils in school longer, and do much to demonstrate to parents that the money they pay for school-taxes is wisely expended. Without a course of study, very many pupils study arithmetic, and little else, after they have learned to stumble over a reading-lesson. Arithmetic has its uses and should receive considerable attention, but it should not usurp all the pupil's time. It is worth much to a man to be able to buy his groceries and dry goods, and sell his corn and wheat and stock without making blunders in addition, subtraction, multiplication and division; but it is worth at least as much to him to be able to put his thoughts into plain English, and to read a newspaper or book without skipping the hard words and with a fair understanding of the author. And if the State educates the children so that they may grow up into good citizens, more time for grammar and reading and history and geography, and less for arithmetic, is desirable. In this respect the education of the common schools should be better balanced; and grading them would promote this end, by giving each study more nearly the due amount of attention and by giving it attention at the proper time. If a school is not graded, and no record is kept of the pupils' progress each term, a new teacher coming in unacquainted with the children is at a great disadvantage. It will take him a week, probably more, to get fairly under way; and in this way alone it is safe to estimate that five per cent. of the school year is lost.

Again, without grading, the teacher's efforts are usually divided among from one and one-half to twice as many classes as are needed. There is no danger that in a country school of forty or fifty pupils of all grades the classes will be too large; so whatever is gained by diminishing the number of classes is clear gain. Every teacher will

appreciate the advantage of having fifteen and twenty minutes for a recitation, instead of ten and fifteen. There are many other advantages that will follow from grading the country schools, but they will occur to every one who will consider the subject, and many of the difficulties that seem to lie in the way of doing it will disappear if the attempt is made judiciously and persisted in long enough to give the grading a fair trial.

I know that there are in very many of our country schools excellent teachers, and from an intimate acquaintance of twenty-five years with the schools and school-teachers I am glad to bear testimony to the progress that has been already achieved. But it does not become us to rest satisfied with what has been done when so much better things are possible.

That the teaching in all these schools for the people should be of a high character such as to aid in making the millions of children coming under their influence upright, well informed, and industrious citizens; that the schools should help to bring out and develop and strengthen whatever is best in the children who attend them, is self-evident,—unless it be denied that the intelligence of a people is the principal source of its wealth, prosperity and happiness. While the teaching of to-day is, as I believe, take the country as a whole, vastly better than it was twenty-five years ago, and an improvement on that of ten years ago, we still fall far short of putting a good teacher in every school-room.

Until that is accomplished, or at least until teachers, school officers, and parents are awake to the advisability of accomplishing it, there will be sufficient reason for referring, in behalf of the cause of education, to the necessity for good teachers; for, after all, the efficiency of a school depends mainly upon the efficiency of the teacher. With a good teacher, a good school is possible under almost any circumstances; with a poor teacher, a good school is impossible.

With wise legislation to secure more schools for the training of teachers, and a more thorough and intelligent supervision of the schools, and a system of teachers' institutes whose influence should be felt in every part of the country and with a better grading of these schools, they would soon rank among the best; for nowhere can better material for the impress of the teacher's skill be found than in the ungraded schools of our land.

I cannot more appropriately conclude this paper than by giving the following extract from an address made by General Garfield before the National Association of Superintendents in Washington in 1878:

"It is a matter of great gratification to me to meet gentlemen who are engaged in the work of education. I feel at home among teachers, and I may say I look back with more satisfaction upon my work as a teacher than upon any other work I have done. It gives me a pleasant home feeling to sit among you and revive old memories.

"There is one thing to which I will venture to call your attention, and that is the great case, if I may speak as a lawyer, which is soon to be tried before the American people,—the case of *Brains vs. Brick and Mortar*. That, in my judgment, is to be a notable trial, and unless the cause is fully argued and rightly decided we shall have no end of trouble in our educational work. To insure its final and rightful settlement the friends of our schools should unite to force the question to a hearing, and should go to the very bottom of the controversy. It has long been my opinion that we are all educated, whether children, men, or women, far more by personal influence than by books and the apparatus of schools. If I could be taken back into boyhood to-day, and had all the libraries and apparatus of a university with ordinary routine professors offered me on the one hand, and on the other a great, luminous, rich-souled man, such as Dr. Hopkins was twenty years ago, in a tent in the woods alone, I should say give me Dr. Hopkins for my college course rather than any university with only routine professors. The privilege of sitting down before a great, clear-headed, large-hearted man, and breathing the atmosphere of his life, and being drawn up to him and lifted up by him and learning his methods of thinking and living, is in itself an enormous educating power. * * * *

"And so in our schools let us put less money in great school-houses and more in the salaries of teachers. Smaller schools and more teachers, less machinery and more personal influence will bring forth fruits higher and better than any we have yet seen."

STATE AND SCHOOL: THE FOUNDATION PRINCIPLES
OF EDUCATION BY THE STATE.

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THAT some close and important relation exists between the state and the school is obvious upon the most superficial observation.

Compare an educated people with an uneducated; it is to compare knowledge with ignorance, strength with weakness, civilization with savagery; in extreme cases, almost the man with the brute. Again, in the same state, say in Great Britain, compare the educated with the uneducated classes. Think of their homes, their pursuits, their pleasures, their very faces and expressions. Recall the intelligent faces and bright eyes around the evening fireside of a well-trained family, and the brute faces about a prize-fight.

Why is all this? What makes the difference? Very largely the modifying influence of the school. The school stands as a friendly border-land betwixt the state and a savage foe: if the school fail to encounter the infant hydra, the state must encounter the monster in its full growth. Nay, the enemy is within the very bowels of the state: in every household there are incipient foes. A constant influx of new life comes into the state, which needs to be moulded by the school while still plastic. The little savage of rapid growth — the *enfant terrible* — is by education to be converted into a citizen, peaceful and useful, or else grow up into an adult savage.

The work must be early and timely; it brooks no delay. Says Lord Bacon, "Commonwealths and good governments *do nourish virtue grown*, but do not much mend the seeds." These views show the importance of education, but do not indicate by what agency it is to be given.

We shall pursue the discussion under three heads, — The School, The State, and their Mutual Relations.

I. THE SCHOOL.

Let us endeavor to grasp the exact object of the school, its central function, — what Coleridge would call its *idea*. Manifold as is education and varied the aspects in which we may regard it, its central idea, to which all others are subordinate, is easily expressed.

Knowledge.

Any large growth of knowledge is characteristic of humanity alone ; no other creature is capable of it. The state itself would not exist without it. But is not *discipline* rather than *knowledge* the central idea of the school? Discipline is included in knowledge ; it is in a large sense self-knowledge applied, — knowledge being truth in possession, virtue truth in action.

Exceedingly close are the relations betwixt knowledge and the state, knowledge being eminently social in its origin and growth. Animal progress is individual, and so extremely limited ; human progress social and almost limitless. Its great instrument is

Language.

By means of language men exchange ideas ; in this exchange there is a paradox, for, at the close of a mental exchange, *both parties have both ideas*, and, by the very necessity of stating them in words, both ideas in improved condition. Hence by mental exchanges, there being no loss but all gain, there arises a vast accumulation of ideas.

Another paradox : this common stock of knowledge, more miraculous than the widow's cruse, *grows by consumption*. Consumption itself is production in the world of thought. Such wonderful advantages attend mental wealth and mental exchanges. Language itself is twofold, — spoken and written (or printed). The spoken word quickly perishes ; writing fixes it, print multiplies it. The vast accumulated stock of ideas and experience is stored in books.

To the great storehouses of knowledge education is the key. We pity the deaf and dumb, who have not the use of language : we build asylums for them. But the treasury of knowledge is chiefly in books ; so that in a most intense and practical sense *the illiterate are deaf and dumb*. To educate them were indeed a charity. Is it no more? The absolute necessity of education is growing with every advance of civilization.

Whence is this indispensable education to come? First, it must come *from without*. This little red colored infant cannot educate himself, — most helpless of all creatures, unfit even for contact with nature.

From the family? Yes, naturally, largely, as far as possible. But mere parenthood does not qualify for the work of education : many parents can ill spare even the labor of the children.

Consider here a fundamental truth : the greater the need, the less

the capacity to bestow education. This is true not of the family only, but also of the poorer sections and poorer classes. Need and ability stand in inverse ratio.

Voluntary association should do its full work, — strain every agency, and to all others add private charity, as illustrated by the noble benefactions of Peabody and such lovers of their kind. We bid them God speed, and thank them in the name of humanity.

But, after exhausting in their order all other resources, — self-help, the family, denominational enterprise, private charity, and all else, — still education, even in this age and in the most advanced countries, is nowhere upon a satisfactory basis of universality and efficiency, so that one can say it has done its utmost work for mankind. And, perhaps, we may add (amidst the growing complexities of civilization), that in this specific direction, in this utmost work of education, lie the dearest hopes and highest interests of humanity.

We need adequate resources for the very chiefest uses. Even with state aid, the consummation is distant and difficult; without it, whole generations will pass away before the present tardy processes reach the masses even of civilized mankind.

In the order of nature, indeed, the chief business of each generation would seem to be to educate the next, unless this duty is fulfilled. Social degradation and decay necessarily follow. This leads us to our second head.

II. THE STATE.

The central idea of the state is undoubtedly

Justice.

Justice, itself the central virtue, rendering to each his own, — to God, to Cæsar, to fellow-man, — is the centre. But what are the outer limits? Concerning these, there are wide differences of opinion.

What is the province of the state? No question was ever more mooted or ever more profoundly considered than at present, especially the relations of the state to education, for transcending all local and temporary issues, are pressing everywhere, even now, not only for decision but for action.

Federal and State.

The present aspect of the controversy is highly favorable, both on principle and authority. Indeed the battle is won: it remains to secure the fruits of victory and wisely to administer the duties consequent thereupon.

The weight of authority is overwhelming, embracing all but one school of thought, and dividing even that one, limited, yet able, school.

Both of the parties in interest are afraid, statesmen and educators. In the United States, the Presidents, earlier and later, including Mr. Jefferson, the head and front of close construction, all vote "aye." So the governors of the States; and what is more, the constitutions of the States.

As with states, so with all the civilized countries, one by one, on the Continent, and in conservative Britain, now strongly committed to the doctrine in all her vast domains, increasing government provision has been made for education.

Mankind seems to have become everywhere awake to this great instrumentality, and recent advances have been made, wholly unprecedented, along the whole line.

Independent, disinterested thinkers are also almost unanimous. Time would fail to enumerate the publicists and political economists, the students of government and law, who concur. But it is useless to dwell longer on authority sustained by practical action and vindicated by results.

There is, however, a single school of close constructionists, powerful in name and argument, which opposes state aid to education in any form, represented in sociology by Mr. Herbert Spencer and by Bastiat in political economy, — a school which limits government strictly to the administration of justice, a school whose opinions and arguments are worthy of great respect and close consideration.

Not all even of the close-construction schools, however, exclude education from the legitimate province of government. Mill, one of the most jealous of restrictionists, the author of the *Essay on Liberty*, includes education, and argues it with his usual ability.

Indeed, this restrictive view is my own standpoint. The subject was approached years ago from the point of view of a strict constructionist of the powers of government, ever inclined to suspect it, disposed to limit its province, and believing its usual vice to be excess.

The arguments of the restrictive school are well known, but have not convinced either the parties or the judges, either statesmen or educators or political economists, — such men as Mr. Gladstone, Huxley, and Fawcett.

Indeed, never before was there such growth of conviction or such practical action as since the promulgation of the adverse arguments. Thus the weight of authority is not only unshaken, but strengthened

by the attack. Fully to discuss the conflicting views of government would consume our whole time. We shall only attempt to present what we regard the true view, which recognizes government as a social agency, of which the test is

Adaptation.

Fitness for the end in view furnishes the criterion as well for government as for any other agency.

To what, as an end, must government be adapted? To freedom, to the highest liberty of all. Its consummation would be the maximum use of one's own powers, — what has been called the *pleroma* or fulness of life in every citizen. This fulness of life is attained by (1) the utmost increase of power, and (2) the utmost diminution of resistance.

The state does not directly increase force; education, however, does, for knowledge is power, making nature subservient to man.

But the diminution of resistance effected both by the state and the school is enormous, by the removal of antagonisms. Conflicting forces are made parallel, especially social forces. Nothing so hinders a man as the opposition of another man. His human foe most shrewdly thrusts, his human friend most wisely helps, him.

Unless government stands sentinel for us, all our time and pains are occupied in mere self-protection; we have no time for industry.

Without education, on the other hand, we have little skill for it. So do state and school work hand in hand toward like ends.

We come now to our last head.

III. THE RELATION OF THE STATE TO EDUCATION.

This relation is that foundation principle which is the direct object of our search.

As we determined the central function of the school and of the state, let us now find the central idea also of what we mean by a foundation principle.

Is charity such a principle, or pity, or mercy? Alas, we fear not. These may be buttresses at the side; but in human affairs they are not the central idea of such a basis as we seek. *Interest* alone can supply that basis.

The foundation principle of education by the state is *mutual interest* founded on mutual service.

In the relations of state and school, the work of each is necessary to the other, and each is best qualified for its own share of the work. That of the school is preparatory and essential to the welfare of the state; the state is equally essential to the school. Justice must first be established before so peaceful an institution can prosper. The services are mutually complementary, and each does its part at a great relative advantage. The relation has considerable analogy to marriage, the state performing the sterner, harder, and more exterior duties and using force; the school, the gentler domestic duties, using reason and kindness. To develop the subject more accurately we present a general view in a few formulated theses.

Theses.

1. State and school are both institutions of a common principle, society.

2. In the preparation of men for the social state, the school is a necessary agency; with advancing civilization, this necessity constantly increases.

3. The interest of the state in this preparation is too profound to be left to chance; indeed, no legislation so involves the highest interests of society and of the state as that which concerns the education of the people.

4. While the state should avail itself of all auxiliaries, it must at its peril see to it that the work of its servant and ally, the school, is timely and properly done. It is under a *subpœna*, — "Herein fail not under a great penalty."

5. Education subserves the purposes not only of the best distributed justice, but of the most enlightened policy, and at the same time the harmonizing ends of the most tender mercy, the most melting pity, the most loving charity; and all these without their usual accompanying enervating influences.

6. Education is the profoundest security of the state within and without, the basis of wealth and strength, the chief means of prosperity and of recuperation from adversity.

An enlightened people is the only safety, the only solid bottom of national prosperity; and this is true *a fortiori* in a popular government.

7. While no wild, indefinite enlargement of the powers of government is to be favored, the study of the subject will induce a more and more profound conviction of the *fundamental character of knowledge in its relations to government as to all things else*; and especially

of the very near and intimate relations of knowledge to justice and liberty, — the great ends of government.

8. Admitting the importance of properly limiting the powers of the state, education supplies the best means of effecting such limitation. Among its numerous and incalculable benefits this is but one, yet one of inestimable importance; therefore, the powerful guns of strict construction may be captured and reversed; for

9. Maximum education gives maximum liberty, permits minimum government.

Knowledge on the part of the people governed, the principle is the best and only security against their agents, the rulers.

The inclusion of knowledge is the exclusion of all that is wrong and the strengthening of all that is good in government. Usurpations and abuses seek darkness, they shun the light. Knowledge is as essential to self-protection against government as against any other power. Knowledge is ever associated with liberty, ignorance with despotism. There is no safety short of an intelligent criticism on the action of government. But for knowledge we should have no strict-construction critics to tell us of its excesses.

10. With an enlightened people the powers of government may to some extent be innocently extended, for with growing checks growing powers are possible.

11. An enlightened people is the best constitution of a state.

The central ideas of school and state, respectively, are knowledge and justice. Now the relations between knowledge and justice are wonderfully close. In the animal world there is scarcely any sense of justice, and little of it among savages: knowledge is a necessary foundation for it.

Knowledge prepares man for life, justice for social life. Education is the art of living, government the means of living together. The objects are almost the same. Knowledge and justice kiss each other. The methods of the state and the school differ; but the ends are the same. That of the school is superior, however, and most to be encouraged, for the state disciplines by force, the school by reason. The state governs from without, the school from within. Government from within reduces the need of government from without. Says Coleridge, "The necessity for external government to man is in inverse ratio to the vigor of his self-government."

The favored agency should be peace, not war; gentleness, not force; reason, not constraint. All these views are true and sound, regarding the state as a mere aggregate of individuals. But the argument is intensified beyond measure when we regard society in

its true view, as an organism. The social organism is no mere figure of speech, it is a wonderful fact, full of important consequences.

We quote a powerful passage from a recent paper of Dr. Wm. T. Harris:—

“As individual, John or James, each has a self—an ego, but a self hemmed in by limitations. In the organic form of institutions, man becomes a series of giant selves, each formed in the general image of man, and having its head, its hands, its deliberative power, and its will power to execute with. As such vast organism, man becomes infinite in respect to many points wherein the single individual is finite.”

“In the family, the inequalities of infancy, youth, maturity, and old age are mediated and balanced, so that the infant lives a rational life in full view of his destiny, the febleness of old age is provided for, the sick are cared for by the well, etc.

“In industry, the lack of skill in one is annulled by the division of labor, and each one acquires the maximum of skill by the minimum of variety in the use of brain and muscle.”

“In the state, we find still greater results achieved. The nation never sleeps, never ceases to watch, think, act, provide, produce. Without the state, the social elements are all exposed under the cruel open sky; the roof of the state must first be raised before the other social elements can be protected.”

The highest of all organisms is society, each element of which is itself a complex organism, a sociological unit, capable of manifold combinations. Vital forces are developed,—warmth, mutual sympathy, mutual action, and reaction; the effects of such interactions are marvellous,—even new social creatures. An educated state is such a new creature. What knows the savage of the daily life of civilization? of the morning paper, the evening book, the works of art, the sciences of nature and of life, the railroad and telegraph, foreign commerce, bills of exchange, the complex machinery of modern life? What thinks he of the great banking systems, the great transportation systems, the universities and libraries, the interdependent and related industries? For all these developments successive assimilations prepare the way. Even in the less complex organisms minerals are first assimilated by vegetables, these in their turn by grain-eaters, then by meat-eaters. The humble earthworm contributes no small share to the elaborate result.

The social organism being the highest, the children born into society are the blood thereof, which is the life thereof, each child an atom in the family molecule, which powerfully shapes and modifies it. The school next exerts its assimilating power, deals with the young and tender thing, too weak as yet for the giant hug of society, with its fierce and hard competitions. The school is an essential factor; the child trained at home alone is a hot-house plant left un-

trained, — a foreign substance in the body politic, raw, indigestible, to be endured or eliminated as may be cheapest.

States are reaching even now the nascent, self-conscious state. The precept, "*Gnothi-Seauton*," is applicable in its fullest sense to this huge organism. Sociology, as a science, has just dawned upon us, full of promise of high results, to be worked out jointly by men of action and men of thought. The men of thought must still take the lead, as Adam Smith, Spencer, Bastiat. A grand work for the state remains to be done, based on knowledge of the laws of state development. New problems are ever arising. Needed now, a Froebel of social laws, a Pestalozzi of the nations.

And now as to results. Accepting the most limited principle as to the province of government, viz.,

The Administration of Justice,

We see that education falls clearly even within it. Preventive not punitive justice. The object of that administration is the protection of person and property against foes, foreign and domestic. Applying this principle systematically by the tests of adaptation, proportion, economy, and all appropriate rules, we say that, for a given expenditure in education, both the people and the state, as such, will reap better and better distributed protection than by any other known form of expenditure; that the results will not only be remunerative, but can be made to yield a strict maximum of remuneration; *i. e.*, that the protection of person and property, through education, can be made the most thorough and economical possible. This protection will be most thorough against foreign foes, whether invading, or invaded: witness Germany. But a better protection is against the probability of war itself; and that is best afforded by education, which exhibits its horrors, and tends to put reason in place of force. People would not stand war if they understood it, — the best protection against sectional strife, — for this is founded on mutual ignorance. So the best protection against individual crime. This is proved by statistics, and founded on principle. Crime is prevented instead of punished. Society deals with the child in the tender age, to give it good principles, instead of with the hardened criminal, to punish bad actions.

Education goes to the fountain-head; begins at the beginning, at the proper age, cuts up the little weeds, cultivates in the spring-time, establishes the school instead of the prison, the teacher instead of the jailer or hangman; substitutes reason for force. Edu-

cation protects also from pauperism, by fitting men for the competitions of life. It makes men self-supporting. Finally, it protects us from our protectors. The object of government is to protect citizen from citizen; of a constitution, to protect citizen from ruler. The best constitution is an enlightened people.

An educated people supplies better voters to choose their rulers, better critics to judge their conduct, a better and larger selection of rulers. They best know their rights, they best know how to maintain them. They are strongest to enforce the means. They are the best check on war, on unjust privileges, on discriminating taxation, on all forms of public plunder and speculation.

Thus might we go on with the comparison, item by item, for knowledge underlies all,—individual interests and social interests. It is the universal solvent.

Education is specifically the biggest possibility of all: on it hang the hopes of humanity. We argue not Providential designs and purposes; only this, that they travel this road to reach their goal. We entertain no Utopian views, expect no sudden revolutions, yet they come more rapidly than might be supposed, under less potent agencies.

There is room in the educational problem for the work of many statesmen and many thinkers for generations to come, and opportunity for the highest exercise of practical sagacity, as well as philosophical breadth and acumen. It is, indeed, a problem of the ages, with ever-varying conditions and the necessity for new solutions for each age, with the growing exactions of modern society and civilization. Perhaps as yet we as little understand what and how to teach as how to govern. Our knowledge of both will gradually improve. The great interests of mankind are harmonious, not conflicting. No two honest interests clash.

If this be true, it is a truth of marvellous comprehensiveness and power. To extend the genuine belief and practical knowledge of this truth is the greatest possible boon to humanity. The old maxim, one man's gain is another man's loss, is utterly false, wicked, devilish, the most pernicious doctrine born of hell. Yet the mass of mankind even now believe, and, what is worse, practise it everywhere. The big title of Bastiat's book, "*Social Harmonies*," is a treatise and a sermon. But we strain at gnats and swallow camels in the action of government.

Why can we educate for war but not for peace; educate soldiers — on the war power — but not citizens and voters. Have we no peace powers? Found asylums for the deaf and dumb and blind, but none for those blind to the sunlight of books, deaf and dumb to the chief language.

Consider the way in which governments really and habitually act. The enormous waste of force by war between nations, war between individuals,—this worse than waste, destruction instead of production,—is shocking, almost inconceivable. Consider the peace armament of Europe, its cost in money, its slavery of men; and all for what? All in the interest of malignity.

This very generation has wasted in war enough to educate and Christianize mankind. And what have we to show for it? Great God! what but infinite loss and ruin, tears and blood? The people perish for lack of knowledge.

Will men never cease to be savages? Never learn that love surpasses hate as the day the night? If there be constitutional impediments to the highest and best means of subserving the ends of government, by all means let them be removed, and, in doing this, get rid of many abuses and old rats' nests. The changes of one hundred years call for improved methods. God spreads before us his boundless universe as if he should say, "There is enough for all, enough for each: why will ye rob and defraud one another? Enter into the great common patrimony of my children." We say it reverently, Rob God! Rob the great common Father! He is not impoverished. Make common cause with God and man, and suck the bountiful breasts of nature. But when you have exhausted what you now know of nature, you have but just begun, for knowledge is infinite; and there is a higher enjoyment than that of nature, even that of society. *Society is God's greatest gift to man.* Intercourse with our fellow-men constantly evokes and develops new faculties and higher powers of nobler enjoyment.

Man must make the most of society and society of man, for either to attain perfection. Largeness of heart is needed as the sand on the sea-shore; and we can never embrace it all, for we are limited and our inheritance is not.

The entrance into this our patrimony is through the gate of knowledge, which lies hard by the gate of justice. To open wide these gates is the function of those allied agents of society, the state and the school. When the school has done its perfect work, there is little left for the state to do.

"SECULARIZATION OF EDUCATION."

BY WILLIAM W. FOLWELL, PRESIDENT OF THE UNIVERSITY OF MINNESOTA,
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[ABSTRACT.]

WITHIN the past half-century a system of state universities and schools of science has come into existence. This intrusion into the field of higher education has been viewed by many most worthy citizens with doubt and disfavor. By some these institutions have been denounced as Godless and infidel. This sentiment has been entertained by so many persons that it seems worth while, even at this late day, to face the question, "What right have such schools to exist, and can their work and influence be beneficent?" A glance at the field of discussion reveals the surprising fact that the state-university question is but a small corner of it. The common schools are everywhere public; so are the normal schools and the greater number of professional and technical schools. We have them to account for the prodigious historical fact that education in general has come into the hands of the people. The historical method is the only one appropriate to the elucidation of this fact. How has this thing come about?

It is simply a factor in that great historic movement, the separation of church and state, which forms the marrow of modern history. In the eleventh and twelfth centuries there was no secular power, or science, or schooling. All were under ecclesiastical control. Kings and peers were papal lieutenants. The crusaders set in motion a train of causes which, in the course of six hundred years, separated religion and politics as wide as the poles. The crusades were eye-openers to Europe. The returning devotees carried back fabrics, products, arts, manners. The capture of Constantinople, an incident of the crusades, dispersed over the West a body of learned Greeks, who carried with them the books of the ancient Greeks and Romans, and thus sowed the seed which ripened into the revival of learning. Upon this, it is well known, followed the Reformation. Whatever opinions may be held as to what the causes and the results of the Reformation were, not even the Ultramontanes can deny that its main result has been the exercise of "private judgment" as a fact. It broke the spell of Roman and ecclesiastical domination in Europe. At length Richelieu, priest and cardinal though he was, proclaimed that states must be governed by statesmen.

To this great and universal revolution from a state of things in which ecclesiasticism was supreme in government and society, to another in which it has utterly disappeared from public affairs, a profound modern thinker has given the happy designation of the "Secularization of politics." It is the main object of this paper to show that parallel with the secularization of politics there has been a secularization of education. Over against the separation of church and state stands the correlated fact of the separation of priest and pedagogue.

The university of the thirteenth century is the germ from which have grown all our modern schools; and the university was in its origin secular. The ecclesiastical powers, it is true, afterward captured the universities and harnessed them in their service; but long ago they escaped from this tyranny. It is a mistaken notion that the universities were developed from the cathedral and monastic schools of Charlemagne. A great historian* declares that these new schools so drew from the old that, in spite of the efforts of the popes, the cathedral and monastic schools fell away. Another† declares that "they," the universities, "owe their establishment, not to the favor of popes or of princes but to the necessities of the times, as thousands of students were drawn together by the reputation of some distinguished teacher. Acts of incorporation were not sought for from the pope until a later period, when the younger universities endeavored by such means to rival those which depended upon their own reputation." According to Adam Smith, they borrowed the title of university and their organization from the trades-unions of the Middle Ages. The development of middle schools as feeders of the universities dates from the Reformation; the primary school had to wait for some generations. It was not till the peace of Westphalia, in 1648, that Europe obtained release from the wars incident to the Reformation. Another period of nearly equal length was now to pass before the full appearance of the people's education. In the mean time, modern science and philosophy were developed, a new science of political economy was born, — a science finding in the nature of man, as modified and limited by his surroundings, the causes which elevate and purify society. Germany was first to foster the new movement, to organize her education. Her schools long ago formed an organism protected and operated by public law and wholly passed from ecclesiastical control. Other European nations have since organized their education. In our own country education is completely secularized.

* Mosheim.

† Hare.

Even in the denominational college, the ecclesiastic influence is weakened, and the professional teacher has usurped the professional chair. Thus we see over against the separation of church and state, the equal co-ordinate fact of the separation of church and school. This secular position of schools has not been the work of any party of infidels or agnostics. It is not the offspring of a corrupt and decaying Christianity. It is an essential factor in the purest, fairest Christian civilization the world has ever known. It is not destructive in its aims or purposes. It is — it must be — a great providential fact, a movement in the great historic evolution of human history. If, then, education is passing out of the hands of the church, and into those of the state, I put it to those who denounce the movement as Godless the question, "What do you propose to do about it?" Will you stem the rising current with your brooms, or, embarking on the mighty wave, be borne onward with the advance of civilization?

We might here drop the discussion by asking those who dissent to show cause why, after abandoning the whole field of primary education and most of the secondary, they should hold undisputed possession of the higher education. When they gave up the common school they gave up the principle of ecclesiastical schooling. But we inquire whether there may not be elements in public education which, in their nature and relations, justify the fact of its existence.

1. Public education is universal in its scope. The people must educate themselves or not be educated. No sect, no church, nor all the churches and sects combined, is equal to the gigantic labor.

2. Next, economy. The state is not only the most efficient but the most economical of all the co-operative agents of modern times. The principle of the division of labor which renders the grading of schools and the assortment of teachers possible will of its own strength dominate all schools and school systems. This is the reason why the academies of New York and New England are giving way to high schools, and why the academy system has taken no root in the West.

3. The organization of education is possible in a public system. America will follow the example of other civilized nations and organize her schools into a complete and harmonious system, offering to the people a free course of school privileges, beginning in the kindergarten and ending in the university.

4. These schools are best calculated to develop good morals and good character. It is no longer sound orthodox theology to found morality on religion, but to build religion on the bed rock of

morality. The Bible presumes virtue. The public school, assuming the essential goodness of human nature, can and must inculcate sound morality founded on man's nature and developed by experience. It can and ought to instil virtue and condemn and suppress vice. It is an advantage to separate the moral training of the school from the religious teachings of the church and Sunday school. The fact that the school is public is an advantage: publicity purifies society as air and water dissolve and dissipate germs of disease. To live and act under public law is a sobering process. The tricks and deviltries handed down from monastic times and perpetrated in the Christian colleges will not disappear until the law of the land shall be, in college as well as 'out, the guardian of right and the standard of conduct.

Finally, the church gains by abandoning fields in which she has no longer a call to work. Liberated from a labor once incumbent on her, she may now turn her unincumbered force to her proper work, the evangelization of mankind. The market needs to be purified; but the church will not open a produce exchange. Education needs to be infused with the spirit of the Great Teacher, but the church will not hold the keys of the school-room.

*IS THE PRIZE-SYSTEM, ON THE WHOLE, THE BEST
FOR COLLEGES?*

BY J. H. CARLISLE, LL.D.

In this question prizes are considered as distinguished from rewards. All the degrees given by colleges, for example, are rewards. They may be given, in many cases, too easily, but no one has proposed as a remedy for this, that they be given as prizes to the few who stand the best examination. It is one thing to reward all who do well. It is quite another thing to give prizes to the few who are pronounced the best. You may offer a reward to all who are punctual, but do not offer a prize to the one who reaches the chapel first in the morning. Give a reward, if you will, to every engineer who uniformly makes good time, but do not offer a prize to the fastest runner on the road.

Before taking up directly the question before us, something may be said about the numerical method of estimating recitations, as it is so closely connected with the prize-system. It was once supposed that, if we carried mathematical phrases and symbols into moral questions, absolute certainty could be had in all our reasoning. That was soon found to be a mistake. It seems strange, however, that we have carried mathematical numbers into our methods of estimating intellectual work, as the exact proof of intellectual effort. Cases have occurred in which the possession of an honor turned on the third decimal figure, in the summing up of hundreds of numerical estimates. At a late commencement it was stated, in a published notice, that after a close examination it was impossible to decide between two competitors, but after a second examination, A. B. "won by a hair's-breadth." What is this that you are measuring so minutely? Is it the length of a man, which you can measure with close approximation to the fraction of an inch? Or is it the weight of a man, which, with the help of Fairbanks's splendid scale, you can tell to the fraction of an ounce, or even of a pennyweight? No; it is intellect. It is scholarship. It is merit. Is this comedy or tragedy? It is not given to any finite mind to measure men thus. There is an appearance, an affectation, let us say without offence, of accuracy here that may be deceptive. The word *examination* literally means to try with scales, or a balance. You have seen printed conspicuously on the scales in

a drug-store the caution, "Do not speak to the druggist when weighing." He has then a work on hand which, with the best instrumental helps, taxes all his powers. The teacher, in his chair, while the pupil is taking his seat, weighs his work as in a balance and writes down the result in an accurate form. Surely this is a delicate work, even though it be often roughly done. There are as many ways of hearing lessons as of saying them. Let us suppose a trustee, or overseer, to be in the room, whose duty is to weigh the teacher's intellect and skill during the hour. Let this be done regularly. Let the gross result be entered on the trustees' books. Let it, in numerical comparison with similar records of the worth of his colleagues, be exposed to their view and the view of their friends. Would that probably work well? Again, let a dozen teachers who daily practice this method be called on here, for example, to grade numerically the next sermon or speech they may hear. Let each give his estimate, and then let all these estimates be compared. It may be that in the different figures given, some might see reason to suspect that numbers can be used for such purposes only by a coarse and rough accommodation. Seven dollars, seven feet, seven inches,—each of these phrases has a distinct, recognized meaning. But 10 being a perfect lesson, a particular lesson is marked 7. Now this is necessarily a movable, variable, unknown quantity, largely influenced by the "personal equation" of the estimator. Figures give us back, faithfully, accurate results only when we put accurate meaning into them at first. You do not secure mathematical accuracy by dealing with mathematical symbols. There is some danger, too, let it be said in passing, that this feature may be carried so far as to sink the teacher in the examiner. The teacher is above the examiner. The helper, the friend, the inspirer is above the weigher, the marker, the rewarder, the disappointer. Some estimate, of course, may be made and kept. But let it not suggest, in form, an accuracy and precision which is simply impossible in substance.

It is sometimes said that society is constructed on the plan of prize-giving, and we do well to train our pupils in it. If it be true that the prizes that life offers to the generous and the aspiring are assigned in the same way with college awards, the question may still be asked, whether it is best to practice this in early life. It is a very difficult point with parents and teachers to determine at what time, and in what manner, the young may most safely make the needful transition from "negative innocence to tried virtue." It does not follow that we should put into our educational scheme every hard feature of life. We need not attempt to produce, by way of anticipa-

tion, in the sheltered harbor of a college campus, the storms that vex the open sea of life. These will come soon enough. There is a golden mean,—and like other golden means it is not easy to find,—between ignoring actual life and prematurely thrusting the young into it. We need not send boys to the demons, who infest the walks of men, to be tormented before the time. Let us by all means prepare the young for real life, and not for Utopia. Yet, let us not push them into life while preparing them for it.

Is society, however, constructed on the prize plan, as our college usages embody it? In every country there are fewer good places and appointments than there are inhabitants. Of necessity some, many even, must do without them. The family circle, the school-room, and the college community all abound with excellent preparation for these disappointments. In the roughest country school-house there are warm seats in winter, and cool seats in summer, which only a few can secure. All others must be contented without them. The plays, associations, and societies of boys and young men have many assignments and elections which leave some in disappointment. All these give a fine training for the prizes of after-life. But do we often find in mature life prizes and choice positions that are decided by close examinations? For instance, quite recently there was a vacancy in the faculty of one of our historic universities. Rumor says there were not less than twenty applicants. Of necessity there were nineteen men more or less seriously disappointed. If these twenty applicants had been subjected to a prolonged examination which was numerically estimated; if the result had been announced in the form of a list of names, the successful name coming first with its arithmetical value opposite, followed by the others at irregular intervals of units and fractions, there would probably have been not only nineteen disappointed men, but perhaps as many mortified men, and almost as many indignant men. The trustees who filled that vacancy will not declare that the man of their choice is demonstrably the best Greek scholar in the list. There are two material difficulties in the way of such an assertion. 1. The trustees have never had the privilege of comparing him with each of the others. 2. If this opportunity had been offered, many of those trustees would have the truthfulness and courage to confess that, in the matter of measuring higher Greek scholarship by fractions and hair-breadths, they were not expert.

These valuable places in life usually depend on reputation, on a generous exaggeration of a man's worth, by his friends, to be generously discounted by opposing opinions and preferences on the part of

the friends of other men, and on other influences and elements. College life will afford ample room and time for the frequent rehearsal and practice of these lessons. We need not gratuitously furnish our students with tests and prizes, successes and failures, mortifications and triumphs, involving a sharpness and insidiousness not often found in the competitions of real life. It may not be best to subject our children to tests, under which the patience, temper, and genial tone of their fathers might give way. The least objectionable prizes are, perhaps, those awarded by a committee of strangers for a single specimen of oratory, for instance. It has been wisely suggested that it might be best to give to the body of students some voice in the assignment of prizes for scholarship. A special reason for this is, that students know, as the faculty can never know, the habits of study of their associates. They might sometimes be able to throw light on the secret genesis of an imposing examination-paper. A general reason is, that this will be one step toward making the whole procedure more like real life. It would become more impersonal by the number of the judges. It would approach more closely to the free criticisms, the compensations, the checks of a popular election. Arthur Helps truly says, "If honors were supposed to be given strictly according to merit, that would aggravate the discomfort of the unsuccessful, that is of the great majority of us in the world. At present men find ready consolation in the thought, which is a just one, that not only is merit frequently left unrewarded, but that oftentimes it stands fatally in the way of worldly success."

Where is the office, in Church or State, that we can confidently promise to our pupils on the condition that they can safely pass a close examination on any branch of learning, or in any test of character? We can only tell them that, in proportion as they are faithful to their individual endowments, the probabilities increase that they will stand among those from whom society often calls men to places of profit and honor. Let us come more immediately to the question by speaking of some features in the prize-system :

1. *Very few are affected by it, in any way.* Not one student in ten aims at a medal or an honor. The great majority of students steadily refuse to respond to any such appeals. The great body of college-work is done without any help from prizes. If so homely an expression may be used, the prize-system, if intended to prize up the average mass of students, is a conspicuous failure. And it is only in a narrow range of effort that these inducements can be offered with any propriety. You cannot offer a prize to the most generous, the most truthful, the most unselfish, or the most humble. You offer them only for accom-

plishments and achievements, which, while they rank deservedly high in the technical estimate of school-life, sink to a subordinate rank when we take a wide and generous view of life in all its manifold relations.

2. Let us notice this system, as it affects the *successful* students. These are, of necessity, a small part of the few who try to gain prizes. Only the smallest part of the small fraction can succeed. These must run the gauntlet of dangers in failure or success, such as the danger of over-exertion with its remorseless penalty on body, mind, and morals; as also the danger of neglecting other duties just as important as the one marked with the golden label. We suppose the student to safely avoid all these risks, and to succeed. It must now be said that he has been urged by motives not the highest. Generous natures may respond to such appeals, but they are generous in spite of this disposition, not by reason of it. This successful man has studied chiefly to outstrip his fellows. Cases are almost unknown where a student has declined a prize, saying, "I have not studied for this. If you pronounce me first in the group where I stand, that is an incident or accident that did not enter into my calculation, and which I do not value. Let thy reward be to another." The student in such cases is moved mainly by the resolution, "I will be first." And this is very near to another, "I will not be second." He who begins life with these selfish maxims, prepares the way for chronic restlessness and for final defeat. It cannot be the will of our Creator that each one of us should try to be first. Earthly society becomes like a pandemonium, in proportion to the number of men who act on these avowed purposes. Our country does not need a generation of men who are set on fire by this energy. We talk often about the evils of ignorance. They are many and fearful. We may, perhaps, overlook the unhappiness of the man who is stimulated by the fierce competitions of educational life, and who rushes into the great world with complacent and exaggerated views of his own abilities and claims, yet little fitted for the common work of life. In a peculiar sense the venerable proverb is true to him, "He that increaseth knowledge increaseth sorrow."

It has been well said "that the heart has some intellect, but the intellect has no heart." The play of fierce passions may be as keen in intellectual contests as on the race-course or at the gaming-table. Sometimes the dreadful reaction comes on at once. The prize is scarcely in the hand when the disappointing "*Is this all?*" springs to the lips, and the envied hero of the crowded chapel, with the generous applause still thundering in his ear, is not a happy man. The

strain on body, temper, mind, and spirit is often severe; and after all, the proof is only that he is in some respects above those immediately around him. The prize has no absolute meaning or significance. It is only relative. It only means that his classmates know less than he does. It gives to society no proof that he is learned, or even a lover of learning. Thomas Carlyle, long ago, said that "He is not a strong man who takes convulsions, though seven men cannot hold him; but he is the strongest man who can take up the heaviest burden and stand the longest under it." He is not the best student, or the most generous lover of wisdom, who, to gain a palpable prize, can spend a few sleepless hours. He may do that and still shrink and shrivel up into a keen, cold, selfish, even sensual man.

3. Let us look at the system as it affects the *unsuccessful*. These make up the great majority of all who are moved by prizes. It is an unfortunate feature of a system that dooms necessarily the great majority of its followers to disappointment and defeat. Just in so far as these have studied for prizes they have the painful sense of failure. There are not a few, we hope, who, with the generous elasticity of pure-minded youth, can instinctively throw off the temptation to consciously wrong tempers and feelings. But we have to speak of common men and natural tendencies. Trench says the doctrine of human depravity may be proved from the dictionary. Perhaps the words in common use by those in prize-rings may bear testimony to the dangers that lie in this stimulus. Those who strive together are apt to fall into strife. Contending leads to contention. The common word *contest* is ominous, and so are *triumph*, *victor*, and *defeat*. Zealous and jealous sound very much alike. Animation in such efforts may easily lead to animosity. The literal phrase, "One ran against another for the prize," suggests the possibilities of collision. To sum up the result of a struggle in the statement, "John beat William," is ambiguous and suggestive. The English phrase, "Senior Wrangler," is, to say the least, not a very happy name for a peaceful victor. The words *fellow-students*, *classmate*, are softening, educating, uniting. But the words *competitor*, *rival*, are not so. If you try to say *fellow-competitor*, or *rival-mate*, you perhaps commit an etymological as well as a moral solecism. Many competitors do, perhaps, withstand the tendency of all these antagonizing impulses. But they, above all others, did not need prizes to draw them out. He who has a moral tone which enables him to "breathe in tainted air," could surely have been aroused by some of the many appeals which can be safely made to students. Surely, motives can be offered which are free from these obvious dangers. All the noblest rewards offered to our race, in the

sphere of moral interests, are free to all. If I lose mine, it cannot be because another has come in before me. It must be because I am slothful or faithless. Cannot the ideal college world be a broad plane, or a succession of high planes, on which many may find ample room to walk abreast? Why make educational life a sloping, slipping pyramid, on whose sharp, selfish top only one human being can stand? Give full scope to all the best native impulses of the young, which will urge them to say cheerfully to their fellows, "Come, let us all go upward." Do not lead them into the temptation, where one is urged to say to his friend, "My success depends on my getting ahead of you." Southey used to show his rare old volumes to friends, saying, "You never saw that edition before, did you?" and when the expected answer came, "No," he would say with the naturalness of a child, "I would be very sorry if you had seen it before." It is not best to place the young student where he is tempted to say to his friend, "I am very glad your knowledge was not greater." We quote again from the wise pages of the late Arthur Helps: "The riding-school seems to furnish a good model. Put a bar up and say, 'All those who leap over this shall be considered good horsemen,' and then the youths who do succeed in leaping over it will congratulate one another and have a feeling of pleasant companionship rather than a bitter rivalry with each other. You may have as many bars as you like, of different heights, in order to test different degrees of excellence in horsemanship; but do not inquire too curiously into the exact merits of each individual rider, nor seek to put him in what you may call his proper place. That will be found out soon enough when they all come to ride across country,—the difficult country of public or professional life."

4. The prize-system in its relation to the body of the students is, at best, negative if not positively hurtful. You lose for them the healthy example of your foremost men, who are obviously moved by the prizes. The common men stand off, take sides, perhaps bet on results, but are not quickened by the artificial zeal of their ambitious fellow-students.

5. The relation of this system to the public may be very briefly noticed. At a late commencement the distinguished gentleman invited to address the societies was asked to act as chairman of the committee to award a prize. He declined from motives that met the sympathy and approval of thoughtful men. There is, perhaps, some danger that the excitement of winning and bestowing prizes may bring into our educational assemblies, on commencement occasions an element and an atmosphere not the most favorable to the best educational work.

It is readily granted that this system has some good results. For example, in England it may do something to break the arrogance of an aristocracy of birth, while with us it may be useful in tempering the pretensions of an aristocracy of money. Many years ago, a young teacher whose select school was gathered from the families of a few wealthy planters and their overseers, said to a friend, "The overseers' children took all my prizes." But it is worthy of earnest inquiry, whether all that is truly valuable in this respect may not be gained by the inevitable and healthy gradations of intellect in educational life without the dangerous influences of the prize-system. Let it be noticed, too, that the good effects of these expedients are readily seen, while the evils may not be apparent to the ordinary observer. The good is not extensive while it is obvious; the evil is intensive, while it may be easily overlooked. This system may promote that knowledge that puffeth up, but not that charity that buildeth up. Our country will never perish, or suffer greatly, from a lack of higher scholarship. It may greatly suffer in the future, as it has in the past, from lack of charity. President Porter says, in substance, the two great aims of college-life are character and scholarship, but character before scholarship. These sharp competitions may increase the one at the expense of the other.

6. We have left to the last the most important inquiry in this whole discussion. We now, without controversy, admit as true, and as underlying all that is valuable in our educational labors and successes, the fundamental doctrines of the Christian religion. We quietly assume the major premise, "Whatever is contrary to these principles should not be embodied in our educational scheme." In discussing the minor premise, "This or that is contrary," etc., we may, of course, often meet varying opinions of wise and good men, and shall often need all the wisdom, prudence, and charity we can attain. Will the doctrine of the New Testament, fairly and wisely interpreted and applied, encourage the system of prizes? We are contented to leave hearers and readers face to face with this decisive question. On next Sunday many thousands of our pupils will read that striking incident where an unwise mother asks for her two sons a prize which was withheld. Perhaps some of those who study that instructive lesson in its Sunday light may be embarrassed, offended even in the Scripture sense of the word, when they close their Sunday text-books and go into the machinery of school-life. You can easily imagine a devout young student praying for light and help in his earnest studies. That good teacher and good man, Thomas Arnold, said there is no grander sight than to see God's blessing enriching

ordinary powers that have been sincerely devoted to His service. Can you imagine an intelligent student praying to be made a victor in a prize-race?

All the evils we have spoken of may not meet in every prize, or in every institution, or in the experience of every teacher. But the tendencies are necessarily and ineradicably there. Can we not urge more earnestly and more successfully than we have yet done, all the affluent, unfailing, educating motives that may be drawn from a desire to promote the "glory of the Creator and the relief of man's estate," while we appeal less to questionable motives and rewards? In other words, "Is THE PRIZE-SYSTEM, ON THE WHOLE, THE BEST FOR COLLEGES?"

THE DELSARTE PHILOSOPHY OF EXPRESSION.

BY MOSES TRUE BROWN, BOSTON.

One day, more years now than I care to be accurate about, my teacher, William Russell, the elocutionist (known to many as the elder Russell), opened before my eyes a rare old volume, disclosing a full-page picture of an orator, standing, to all appearance, inside a globe, and pointing with extended arm toward some letters (*r., obl., u.*, right, oblique, upward) inscribed upon the inner periphery of the projected globe,

The teacher said: "This is 'Austin's Chironomia,' and here you will find the best treatment extant of the subject of gesture." I attached little meaning to the picture then, and I have since found reason to believe that neither my eminent teacher nor the author of the rare volume found any deeper significance in that pictured globe, inside which stood the orator as in a cage, than a convenient way of teaching the technique of the hand and arm in gesture.

Some years later, I was reading in an idle mood Victor Hugo's *Toilers of the Sea*, when a significant sentence of the great French writer flashed a correspondence into my mind that had never occurred to me. The sentence read:

"Man stands on one globe and bears another upon his shoulders."

Are all gestures, I reflected, rooted in correspondences between this material appearance, our objective sphere, and our subjective relations to this appearance?

Later on I read from some manuscript pages of the great teacher of expression, Delsarte, that had somehow come into the possession of Prof. Lewis B. Munroe, of Boston, an analysis of the human face. I may be permitted, perhaps, to present a few sentences that impressed me:

1. It is through the eye that we inhabit space. We gravitate to the earth through the feet; toward persons through the torso; to the universe through the eye.

2. There are three planes of vision: The plane of the superior; the plane of equality; and the plane of the inferior. They are, as it were, zones of our visible hemisphere. Each zone is most significant in expression. Man alone surveys the three zones. The animal, bound by

instinct, and with no conscious center, takes no note of the plane of the superior. Hence this profound law of gesture written in organisms. *Animal radiations are downward. Human radiations are upward and outward.*

3. If an idea leads you, the eye moves upward; as you gain the idea, the eye tends downward.

4. The phenomena of the imagination are in the spaces of the imagination.

5. The line of the horizon bounds the zone of the positive and negative emotions.

The zone of the positive extends from this line through ninety degrees to the zenith.

The zone of the negative, from this line, through ninety degrees, to the nadir.

6. Thus, too, the hemisphere from zenith to nadir, *which we face, is positive in significance.* The hemisphere at our back *is negative.*

7. And now note: The angles formed by the projected arm and torso have *absolute* significance in gesture. Ascending angles mark degrees of certainty or affirmation; and descending angles mark degrees of doubt or negation.

So the Abbé Delaumosne, pupil of Delsarte, wrote, in fine appreciation of the inner significance of these laws, these rare sentences: "Exaltation uses the gestures of a circle, making lines higher and broader as the object is more exalted. For God there is no circle. There can be none. Our concept outlines a portion of an immense circle, of which we can touch but a single point. This point, upon the inner periphery, we touch with a gesture of the eye, *It is impossible to finish the infinite sweep, and we retrace our steps.*"

Now, let us return to that sentence of Hugo, in quest of some of the correspondences which it suggests. "*Man stands upon one globe, and bears another upon his shoulders.*"

The globe upon which we stand is the world our senses have built for us. It is the objective world of the mental philosopher. A world of matter, made known to us through five special organs of sense, grouped in close proximity to the central mass of organic nerve-substance,—the brain.

Now, the testimony, continual and persistent, of these organs of sense would be absolutely final (did not we correct their averment through science) that we stand at the center of a limited and fixed plane, with an arch of crystal above and shutting down upon us.

We are at the center, and refer of necessity to all things as here or there, from the center where we stand. These sense-relations remain real with the savage and the civilized child, and in our every-day talk

we revert to that early morn of the race when the sun and moon and stars were the greater and the lesser lights, made to rule the day and night of the greater earth, called out of chaos.

This is the globe upon which man stands. But the globe he bears upon his shoulders, what of that? It is a world inexorably bound to matter; and yet not of it. The world of concepts; images of the actual; pictures of the real; projected in some way that modern science is yet unable to explain, from the convoluted hemispheres of the brain, every picture being some kaleidoscope *re*-presentation of the forms, changes, and interactions of matter.

This is the world man bears upon his shoulders. So much for the suggested correspondences of Hugo's aphoristic sentence. And now the significance of Austin's caged orator becomes apparent, standing inside a globe with its lines of latitude and longitude (copied so faithfully, and so absurdly, by every writer on gesture since Austin, as a part of a wooden technique, calculated to disgust the student at the outset).

Read between the lines and this encircled sphere and its orator are illumined! Think a moment! Is it nothing that this dome of the sky has impressed its form upon you since childhood? Nothing that, standing on the edge of the ocean, you have always seen the white sails slide down the slope of the sea? Is there no significance in the blue curves of the distant mountains? None that when Michael Angelo would make visible human aspiration, he threw the dome of St. Peter's against the sky? None in this human sphere, the brain-case with its inclosed hemispheres of organic thought-substance?

Ah! I suspect it would be found, could we push inference, the eye of the mind, far enough, that all our gestures root themselves in the soil of correspondence and relation.

Reason as we may, our every-day talk and gesture betray us. We are, in vernacular, and at root, disciples of Ptolemy. With us the sun rises and sets, and the moon is larger than the day-star. The heavens are the heaved up, the hells the heaved down! Whatever may happen as scientific verity, the time will never come in art when the Hades of our New Version will not be real to the galleries at the theater; and the applause deafening, when the vociferous tragedian, armed with stage-sword and buckler, cries as he stabs: "Down, down to hell, and say I sent thee there!"

Thus ever and always exists for us a material or objective hemisphere. We are at its center; and refer to all objects as filling its spaces, or as outlined, against its periphery!

And now, note, by inexorable law and by a subtle chemistry hwhic we may never fathom, *the great knot of nerve-substance that fills the*

skull projects just such another hemisphere with periphery, spaces, and objects.

And in all the universe, for us, there can be but two classes of objects: (1) Objects in real, and (2) objects in ideal. So, I think, it now appears that Hugo wrote a profound sentence when he wrote, "Man stands upon one globe and bears another on his shoulders," and that Austin's globe, with its lines of latitude and longitude, and with its caged orator inside, ceases to be meaningless; and that we may deduce from our consideration of the correspondence and relation existing between the inner and the outer, these three laws of gesture, as applied to objects filling the spaces of two worlds:

1. *All our lines of gesture must have reference to a projected hemisphere, either an objective or subjective apparition.*

2. *That the gestures that refer to objects, filling these spaces, will be identical.*

3. *That each line of gesture is a radial line, from the center where stands the speaker: and will have the three technical elements of direction, place, and extension.*

This is the rationale of Austin's technique of gesture as developed in "The Chironomia." Along this well-worn track have all our teachers of expression traveled until Delsarte led the advance into new and hitherto unexplored territory.

You may judge how incomplete and unsatisfactory must be my presentation of Delsarte, when I tell you that I have been able, before my classes, to cover by twelve carefully written lectures only the *general expressions of the organism*. I shall consider myself fortunate, therefore, if I may be able to touch a few points along the line of his discovery with a fair degree of clearness.

Delsarte accepted the deduction of his distinguished countryman, Cousin, that expression is the common measure of all the fine arts. So he sought for the laws of human expression in the manifestations which accompany this mysterious union of a material body and a spiritual essence. *The philosophy of expression*, he said, *is the philosophy of manifestation*.

He announced that his philosophy, in its broadest sense, covered the manifestations of the Infinite as revealed in the Universe, and in its restricted sense the manifestations of man as revealed through the body; so his definition of expression is a fine comment upon his philosophy. He says: "*Expression is the inner essence or soul, revealing itself through the outer substance or body.*" See with what lofty phrase he embodies his conception of all that is, of the Cosmos! There are two subsistences, of whose reality man is conscious, and whose recorded phenomena make the sum of that knowledge which

we call *science*. These subsistences are (1) Matter, (2) Mind, Spirit, or Soul. Nothing exists or can exist, so far as we know or can think, that is not one or the other of these subsistences. They are the universal whole.

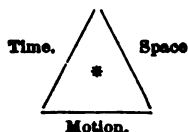
There are two grand words that we speak when we would cover with a name the aggregate of matter and the aggregate of soul. These words are the Universe, and God! Our concept of the Universe is of matter; fixed in form; occupying space; held by law. And our concept of God is of spirit; in forming soul; sustaining power; animating center; and pervading presence; of the Universe. All masses of matter are globes, both the infinitely great and the infinitely small, and are in never-ceasing motion.

Finally, Delsarte sums up his sublime conception in a profound law: The mysteries of God are revealed in space and time, through form and motion. They are concentrated in rhythm, which is vibration or swing of matter in space and time.¹

Now, from the broad, the general, the universal, note how Delsarte descends to the restricted, the particular, the immediate; to man, the finite image and reflection of Cosmos; the most considerable inhabitant of our earth. Man, as we find him on this earth, is both matter and soul. He is the apex of developed matter, and the summit of all earthly manifestations of soul.

This union of matter and soul *in form* we recognize as the organism. And man thus organized is, from the necessity of his being, a creature of time, space, and motion. And as an organism he is, of necessity, limited or restricted, *because he exists under certain fixed relations which he is powerless to change*.

And this brings us to Delsarte's "Trinity of Restriction." They might be illustrated by the successive lines of the triangle, thus:



TIME is an unavoidable condition of being. Once man was not on the earth as apparition or manifestation. Then he became. (It has past.) He is now. (It is present.) He will be...ah!

SPACE.—It holds all existences, small, great, greatest. It holds man; where can he go out of space?

¹ How inevitably these far-reaching propositions of Delsarte recall Goethe's contemptuous query of those who would limit God and the Universe!

What were a God that only impinges externally the Universe, and turns the Cosmos, in a circle, upon his finger?

MOTION is force expending itself. He is acted upon by matter in vibration. Vibration of the conscious self is feeling. I see, I hear, I taste, I smell, I feel, translated in terms of matter, mean I vibrate, I am set in motion!

And thus we find man on this earth conditioned as a union of matter and soul; limited by space and time, acted upon by, and reacting against, matter!

If, at this point, some one of my readers should be moved to exclaim that this is the thought of the transcendental school of psychology, of St. Hilaire, Oken, Goethe, of Swedenborg and of Lavater,—if he should think he detects the terminology of the mystic Hegel in Delsarte's Trinities, let him not be alarmed; for, whatever may have been Delsarte's metaphysics, he founded his science upon observed manifestations. He was as inexorable that every hypothesis be confronted by facts, as was Darwin, or is to-day Huxley, Spencer, or Tyndall. With him, as with them, his method was what is now known as "*the scientific method.*" First observation, then experiment and comparison, and finally *verified hypothesis formulated as law.*

And it is a literal truth that his note-books were filled with jottings of scores of keen observations, of how people about him acted, under the sway of varying excitements and passions.

Take, for example, such generalizations as these:

1. If I am called as confessor to the death-bed, and the dying man raises his hands to pray; *if the thumb falls inward*, I know that he is already struck by death!

2. I am out walking, and approach a friend, who is thinking deeply; he greets me with a smile; and after he has passed me, *he smiles on* until a new idea changes the current of his thoughts.

3. I go to church and hear the preacher shouting. His audience are asleep. *Let him be still: they will awake and listen.*

4. If I fold my arms, and at the same time ask a question, *my inquiry becomes a menace.*

5. The eye has but two expressions. It is (1) attentive. It looks *at*. It is (2) intentive. It looks *in*. Delsarte is in strict accord here with Shakespeare. The muscles of the face coördinate with the otherwise expressionless eye, and so, "*lend the eye its terrible aspect,*" in extreme passion.

6. A man used to command, threatens by a gesture of the head from back, forward. If consciously weak, from forward, backward.

But to return to the point from which we digressed. We were about to consider Delsarte's Trinity of the Being. Analyzing the soul from the stand-point of manifestation. Delsarte taught *three states*

of the being, distinct in action or manifestation, but coexistent in consciousness.

Every gesture, then, has its reason to be. It must disclose the side of the being from which it springs. Inner states become known through outer manifestations. Hence these words of Delsarte are full of meaning: *Strengthen the center and you will have freedom at the surface.* The body is the servant of the soul. More than that, no soul has ever been seen, or can be seen, separated from body. *In manifestation they are one.* To strengthen this unity, to develop harmony of the outer and inner, so that there be no cross-purposes, is manifestly man's work on this earth. Remember Goethe's words which he grandly applies to the Cosmos :

"Naught is outer. Naught is inner;
For the inner is the outer."

All has birth from the inner vital unity; the manifold must arise from the one, not the one from the manifold. *In his essence, man reveals himself as threefold:*

1. He is Vital, Sensitive, Physical. Through this part of his nature he manifests the phenomena of animal or organic life.

2. He is Mental, Intellectual, Reflective. Through this part of his nature he manifests the phenomena of intelligence. He thinks, reflects, reasons.

3. He is Moral, Affectional, Spiritual. Through this part of his nature he manifests the phenomena of the affections and of conscience. He loves kith and kin, family, friends, and neighbors, his country, justice and right, his liberty, and God whom he worships.

These are three states of one being; three sides of the same prism; three currents of the same outflow; three rays of one beam of light. Neither state exists independent of the others. You may separate the terms, *you cannot separate the essence.* Nor can you know the essence except through its manifestations.

Now, the expression of these three states of the being are made through the organism, which is divided for this purpose into three divisions: (1) The Head; (2) The Torso; (3) The Limbs.

These are the agents of expression. These agents express the inner. Each agent has its normal language. Thus the head, by its form and gestures, translates *our mental states.* The torso, by its gestures, translates the *moral* side of the being; and the limbs show the activities of the *vital.*

To each of these divisions of the body Delsarte gave nine primary forms of gesture. So each agent has nine primary gestures. He further subdivides these divisions. Thus of the head there are the

divisions, first of skull and face, and then of eye, nose, mouth, chin. So of the arm there are the divisions of arm and forearm, and subdivision of shoulder, elbow, and wrist as centres of motion, and further of the hand to show the language of its parts in gesture.

Delsarte formulated nine laws governing the manifestations of the organism. His statement of these laws is convincing. The law, as stated, carries its own comment. "This is true," says the delighted student; "I wonder I had not thought of it before!" And so, with wonderful clearness of statement, Delsarte has given thorough analysis of the organism and its parts. And this analysis, to the thoughtful student, will become a new philosophy, and *clothe with real living flesh* the dry bones of that wearisome skeleton of detail and technique, which we call our elocution.

In conclusion, let me congratulate our learned bodies of educators that François Delsarte has given the world what he was delighted to call "The Science of Expressive Man," and that, if there were no other merit in his work, he has set forth with such remarkable force and convincing clearness the great central truth, much in need of emphasis in these days of material advance, *of the immanence of the essence or soul in all manifestations*, whether of the infinitely great in the Universe, or the infinitely small in the atoms of a molecule.

ORAL INSTRUCTION.

BY LARKIN DUNTON, LL. D.

INTRODUCTION.

IN the days of my childhood it was customary, at least in the neighborhood where I lived, on the frontier of Maine, to begin the study of English grammar by committing the text-book to memory. I remember well the two winters that I labored over Murray's smaller grammar book. Paragraph after paragraph and page after page were read over and said over till the whole book was fixed in my memory; so that, with very little prompting, I could repeat it from beginning to end. And I made no distinction in parts with reference to importance. Definitions, paradigms, lists of irregular plurals and of adjectives of irregular comparison, rules, and examples illustrative of rules and of definitions, all were committed to the storehouse of the memory as wares of equal value.

The accomplishing of this task was no doubt educationally profitable. It was a severe schooling of patience and of perseverance. It fixed the habit of attention and cultivated the power of remembering words as seen on a printed page; but "as the art of speaking and writing the English language correctly," or, indeed, as a means of understanding the science of language, it was a sad failure. No additional examples of the things defined and no new applications of the rules had been required, either in the form of written or of oral exercises. Indeed, no attempt was made by the teacher to secure an understanding of the text; so that when the book was all learned I had had no practice in composition, and was unable to recognize even the parts of speech.

This is, no doubt, an extreme example of text-book learning, pure and simple; but it is by no means a solitary one. I could quote dozens like it from my own experience; and it is undeniably true that there formerly was, and now is, in the country, a great deal of this kind of school work. It was accompanied by no teaching. The work of the teacher was to hear the lessons recited; and this was done with the book in hand, that there might be no undetected errors or omissions.

As, however, the principles of education began to be investigated, and the true methods of teaching to be made known, the harmful results of the practice to which I have alluded, considered pedagogically, began to be understood, and quite a general effort was

made to substitute something better. The result was the introduction of object teaching, lecturing, and oral instruction generally. The text-book was thought to be the cause of the evil, and so it was proposed to cure the evil by removing the cause. Accordingly, text-books were largely banished from many schools. Astronomy was taught by lectures. Geography was learned from maps without names. The spelling-book was discarded. We had talks on history; and oral language lessons took the place of grammar. Some good beginnings were made in observation; but the teacher, in many cases, was too large a factor in this kind of work. Generally there was a maximum of talk with a minimum of study.

But it was soon found that information communicated in this way did not stick. Then came the mania for note-books and abstracts. I have seen the principal of a large school dictating grammatical rules and definitions to his teachers, to be by them in turn dictated to their pupils, written up in note-books, and committed to memory. And all this to avoid using a text-book! In some schools every teacher made her own spelling-book and wrote her own history and geography. And this is not yet an extinct species of folly. But what arrogance to assume that a better text-book can be produced by a tired teacher, pressed with her varied duties in school, than can be written by an experienced author at his leisure! But suppose it were as good, of what advantage is it to make pupils strain their eyes over indistinct manuscript, when clear print is so cheap?

It seems to me that we are in danger of such a reaction from some of the practices of to-day as will carry us too far in the direction of former errors; and it is on this account that I wish to put in a plea for oral instruction. The exclusive use of text-books is one extreme, all oral instruction is the other. The golden mean includes both.

NECESSITY FOR ORAL INSTRUCTION.

Looking at the general question, now, from the subjective standpoint, let us inquire into the necessity for oral instruction.

All elementary ideas arise in the mind in consequence of the presence of the physical world around us or of the ideal world within us. No sounds or marks, that we call words, have the power, originally, of awakening ideas in the mind. The conditions under which it is possible for a word, whether written or spoken, to serve as the sign of an idea, are, first, the awakening of the idea in the mind by its appropriate object; second, the knowledge of the word; and third, the association of the two in the mind, the one as the sign of the other.

When these conditions have been fulfilled, then, and then only, has a word the power of bringing an idea into consciousness.

This granted, and it follows that it is impossible for books to speak to children till the words of the books have been learned ; that is, till the ideas and words have been so associated that the sight of the one will recall the other.

Furthermore, written words are primarily symbols of spoken words. A child first hears a word, then sees its written form and learns the form as the sign of the sound and of the idea signified by the sound. No one would think of teaching a child to read written words that were not already known as spoken words. Whether it would be possible to teach a child to associate written words with ideas, independently of the use of spoken words, after the child had once acquired the power of speech, it is not necessary here to inquire, for, practically, it is never done ; and certainly it would be a difficult task.

If, then, books are powerless to awaken ideas in the mind in advance of original observation and of a knowledge of words, children need oral instruction in observation, so as to secure as wide and varied a knowledge as possible of the elementary qualities of things and of the names by which they are designated.

Children need, also, oral instruction to secure that constant, lively, and varied action of the imagination which is necessary to its best development. The growth of the imagination is too often left to chance. It is frequently dwarfed from inaction, and often, on the other hand, stimulated to the wildest and worst activity. Again, from false treatment it is made to create false images, by uniting incongruous elements. This frequently happens, because the teacher is ignorant of the laws that govern its action.

It is a fundamental law of the imagination that it builds all its images with the proximate or ultimate elements of knowledge gathered in previous experience. If, then, the action of the mind in this direction is to be healthy, it must be required to construct those images only, the material for which is already in its possession. There are few ways in which young minds are more frequently injured than in making drafts upon the imagination which it is unable to answer. Vague and indefinite conceptions often arise from this cause, as well as confusion of ideas that ought to be distinct. And books cannot set the child right ; for books are deaf, and blind, and heartless.

The living teacher, then, is needed to counsel, to direct, to stimulate, and to restrain, as well as to provide materials, to choose times, and to make occasions for the proper and systematic action of this power.

Oral instruction is necessary, too, in thinking. Thought is emphatically the knowledge of relations. No doubt all knowledge involves the perception of relations; and yet the distinction between the knowledge of objects, and the knowledge of the relations they hold to one another, is a valid one. It is one thing, for example, to know the working of the imagination, and quite another thing to know its relation to the powers of observation.

Now the condition of knowing the relation that exists between two objects is a knowledge of the objects in their relation. In other words, relations are known only through a knowledge of things related. The necessity of oral instruction by a living teacher, who watches the child's effort to think, now guiding, now encouraging, now restraining, must be obvious. How many mature minds are led astray at this point! How many often assume to know definitely the relation between unknown objects! I have known even respectable schoolmasters to have definite opinions as to the relative merits of two systems of education, neither of which was fully known to them. And it is not an uncommon thing to meet with members of our profession who are very sure of their knowledge of the relative value of two methods of instruction, only one of which is known to them. If men need checking and criticising and guiding, how much more children!

Again, children often need help in their efforts to think, in bringing related ideas or things distinctly before their minds, and in holding them thus till the relation in which they stand is clear. Take a case. Suppose you wish a child to discover the truth that the product of two factors is the same, whichever is made the multiplier. Place before him five horizontal rows of dots, with six in each row, so arranged as to make six vertical rows with five in a row. Set him to count them, and thus make sure that there are thirty. Let him count the fives, and then the sixes, so as to know for himself that five sixes are thirty and that six fives are thirty. Then, while he is conscious that the six fives are the same as the five sixes, both being present to his sense of sight, ask him which are more, and you have helped him to the thought by simply keeping before his mind the related objects in their relations. I suppose the fundamental difficulty in the solution of arithmetical problems with most children is the inability to represent to their minds clearly the conditions of the questions. How often it happens in such cases that a few simple questions, which bring distinctly before the mind the things of whose relations the problems treat, remove all difficulty!

And so it happens, in thousands of cases, that the voice of the

living teacher, who comprehends the conditions of all thought, is the necessary guide to the formation of the best habits of thought. Early thinking, then, needs oral direction.

GROUND TO BE COVERED.

Taking it for granted now that the necessity for oral instruction has been established from considerations of a psychological nature, let us turn to the objective side of the question and inquire what subjects should be specially treated in this way in common schools.

Among the first subjects to be systematically developed by a course of oral lessons is that of mathematics, in the two directions of form and number.

The lessons on form should cover this ground, at least : recognizing and naming geometric solids, including the sphere, cylinder, cube, prism, and pyramid ; a study of the surfaces of solids, so as to divide them into plane and curved surfaces, and to decide what kind of surfaces bound each of the solids studied ; the shapes of plane faces, including the circle, square, oblong, and triangle, as seen in the cylinder, cone, cube, prism, and pyramid, respectively ; the edges of solids for the observation of lines, both straight and curved, as well as for the direction of lines, vertical, horizontal, and oblique ; the relation of lines, parallel, perpendicular, and oblique ; angles, right, obtuse, and acute ; a description of the several solids that are studied ; a study and classification of the curvilinear figures, the circle, the ellipse, and the oval ; a study and classification of polygons, including triangles, quadrilaterals, pentagons, hexagons, and octagons ; a study of solids, for the purpose of classification, so far as to divide them into solids with curved surfaces, — spheres, spheroids, and ovoids ; solids with plane and curved surfaces, — cones and cylinders ; and solids with plane surfaces, — pyramids and prisms.

These form-lessons should be thorough enough, and should be continued long enough, to fill the minds of the children with the conceptions of the common geometric forms, both superficial and solid, to fix their names, and to make them familiar with the principles of classification and of logical definition. For the training of the mind to habits of exact classification and definition, perhaps there is no subject better than form, inasmuch as the generic and specific qualities can so readily be presented to the eye.

Oral instruction in number should appeal to the perceptive powers, the imagination, and the thought faculty, successively, step by step. Perceived objects should be numbered, added, subtracted,

multiplied, and divided ; imagined objects should be treated in the same way ; and then should follow the operations upon the abstract ideas of numbers. Signs of numbers, both oral and written, should be used in connection with these three kinds of treatment. The danger from too protracted a use of objects is about as great as that from beginning the study of numbers with the learning of names and figures. The first two stages of the work, as here indicated, are to prepare the mind for the third ; and, when the mind is thus prepared, the student should be allowed to advance, and not be kept marking time.

Nowhere is oral instruction more needed than in the natural sciences. A child, if left to himself, will pick up some of the elementary knowledge out of which these sciences are to be constructed ; but his ideas will be limited in their range, and on many points vague, unless his observation is directed by one who is familiar with the whole ground.

As a preparation for reading treatises on botany, zoölogy, and mineralogy, there is needed a systematic, protracted, and well-directed observation of plants, animals, and minerals. Lessons on these subjects, when given at all, usually fail for lack of system. Weak, random talks, whether by teacher or pupil, about what is well known, are not a sufficient preparation for the study of books. All the elementary ideas involved in the treatment of the subjects by the books are to be acquired by the pupil's own original research.

Lessons on the human body should be included in a course of oral instruction. These lessons should cover the following ground, if not more : parts of the body, parts of the head, parts of the face, the neck, parts of the trunk, the arms, the hands, the legs, the feet, the eye and sight, the ear and hearing, the nose and smell, the tongue and taste, the sense of touch, the teeth, the skeleton, the muscles, the skin, the circulation, respiration, and digestion.

The immediate object of these lessons should be to give the pupils a knowledge of the human body, — of its parts, their relations and functions. The ultimate object should be to give them a reverence for their own bodies, and to create both the ability and the inclination to lead lives of temperance and self-restraint.

While these lessons, then, are to be based upon, indeed to consist mainly of, observation, the knowledge thus acquired is to be constantly supplemented by the teacher. Apparatus for this class of lessons is inexpensive ; for each child is supplied with at least two subjects, himself and his neighbor.

Color lessons should not be omitted from this list ; for, of all elementary ideas, perhaps no others constitute so large a part of the imagery habitually present to consciousness in our ordinary processes of thought as form and color. Not only form, then, but color, as well, would I make a special object of well-directed study.

Lessons on this subject should include instruction on the prismatic colors ; tertiary and neutral colors ; standard colors, hues, tints, and shades ; production of colors ; and harmony of colors. Each of these divisions of the subject should receive such special care that the eye would be well trained to perceive colors, the memory to represent them, and the taste to feel the influence of their harmonious arrangement. There is one phase of this subject that deserves more attention than it usually receives : I mean the naming of colors. I know of no department of human knowledge where names are applied more indefinitely than in that of color, — psychology and metaphysics alone excepted. It is well also to bear in mind that in this department, as in all others, time is a necessary condition of good training.

Vocal music, also, deserves to be mentioned in this connection. This is generally conceded. And yet there are those who regard vocal music as of too little practical value to be worthy of a place among studies proper for the common people. But if *practical* means, in its ultimate analysis, capable of producing happiness, then the objectors to music cannot have well considered the question ; for the power of song is a perennial spring of joy.

Vocal music can be learned only from oral instruction. It consists of a series of sounds, varying in pitch, time, and timbre, and related to one another in harmony and rhythm. Not one of these qualities or relations can be learned otherwise than by the ear. It is true that we may learn the written signs of the sounds from a book ; but then the signs will be merely the signs of the names. We may also learn the names of the sounds from a book ; though, strangely enough, when we seem to have done so, the names we have learned are only the names of the signs ; so that when we hear these names they awaken in our minds only the ideas of the signs of the sounds, and not the ideas of the sounds themselves. Sounds, which, alone, constitute music, can only be learned by hearing them. Oral instruction in music, then, should always begin with the teaching of sounds ; and the relations of sounds in harmony, rhythm, pitch, and time should be taught by teaching the sounds in these relations. When musical ideas are clear and distinct in the mind, then names and signs may be taught that will really be names and signs of the elements of

music. When this stage is reached, the pupil is prepared to read music without the aid of teacher or instrument. I regard the proper teaching of music itself as of far more importance than any question relating to systems of musical notation.

A plan of oral instruction should include lessons in morals. I know the discipline of the school-room is itself a great moral lesson; but still there are many duties that it does not teach, and many which, if left to chance, will never be taught at all. Let the duties of pupils to themselves, to the school, to society, and to God be carefully mapped out and the ground fully covered. Let example be followed by precept. Let instruction as to duties, and as to the results of their performance or neglect, be given. I care not whether these lessons come at stated times or not; I only insist that they be given. If this is done, the result will be more thoughtfulness and self-restraint on the part of pupils, and a race of better men and women; for conscience will be quickened by a knowledge of duty, and correct practice will ripen into habit.

Oral instruction in language includes, of course, the three departments of speaking, reading, and writing.

How shall we teach children to talk properly? Language lessons, so called, are frequently productive of no good results. Language is not an end in itself, it is rather a means to an end; and that end is the expression of thought. Will not this truth give us a clew to the method that ought to be pursued in teaching language? If power to do is acquired by doing, then power to talk must be gained by talking,—power to express thought by expressing thought. Of course, back of the thought lies the acquisition of thought, and the acquisition of language with which to clothe the thought. And what mean those years of silent hearing passed by every infant? What is then the occupation of his mind? He is observing things, acquiring ideas, and hearing names; thinking thoughts and hearing sentences. The same thought is in his mind, accompanied by the same oral expression, perhaps a thousand times, before he attempts its utterance himself. At last he begins to feel the power of that universal human impulse, which moves us to communicate to others the thoughts and feelings in our own minds. And then he is forced to speak. This, then, would seem to be nature's method of teaching children to talk: first, numerous impressions of truth and language; then, after patient waiting, and under the influence of an inward monitor, expression. If, then, the natural method of acquiring speech is to be continued with children after they enter school, this is the law underlying all elementary language lessons: make the thoughts so clear, the interest so

great, and the words so well known, that the child will be forced from within to make an effort to express what is in his own mind. All lessons, then, based upon the assumption that the child is to make an effort to use language correctly, are out of place. The child's effort is to be to communicate his thoughts. Of course wrong expressions are to be corrected, and he is to be led to express the exact truth. But all mere sentence building, constructing sentences that shall include all the parts of speech, finding adjectives to fit given nouns, and nouns to suit given adjectives, making sentences after special patterns, constructing simple, complex, and compound sentences, — all such exercises, however useful they may be in studying the science of language, are not in place in a course of oral instruction, the object of which is to give the children the power to tell what they think.

The first lessons in reading are all oral ; or, if the book is used at all, it plays a subordinate part. The successive steps in first lessons in reading may be as follows: the awakening in the mind of a distinct thought, either by the use of objects or by means of oral speech ; the expression of the thought by the use of an oral sentence ; the exhibition to the eye of the same sentence, either in print or script ; the reading of the same, both by the teacher and the class ; the reading of the separate words, by both teacher and pupils, till they can be easily called, both in the sentence and apart from it ; the separating of the words into syllables, and the study of the syllables till they can readily be called ; the learning of both the names and powers of the letters ; learning to make the separate letters ; the uniting of the letters to form syllables and the calling of the syllables ; the joining of the syllables to form words and the calling of the words ; the uniting of the words to form sentences and the reading of the sentences thus formed. Were we anxious for a new term, we might call this the *analytico-synthetic* method. It begins with the written sentence as the expression of a thought already expressed orally ; analyzes the written sentence into its proximate, and, finally, into its ultimate, elements ; shows the equivalent in oral speech of each element ; teaches the pupils to form the elements, and then proceeds synthetically to reconstruct the sentence.

As sentences represent thoughts, the unit in the expression of thought is the sentence ; as words represent ideas, the unit in the expression of ideas is the word ; but as spoken words are composed of separate sounds, and as each sound is represented in the written word by a separate letter, or a group of letters, the unit in the written expression of sounds is the letter. If, then, the pupil, dur-

ing his oral instruction in reading, is to be made to do habitually what he will be obliged to do without direction, when he comes to read new words and new sentences by himself, he should be required at the outset to recognize sentences and words not only as standing for thoughts and ideas, but also as the representatives of spoken sentences and spoken words ; and he should also be made to know the letters as symbols of elementary sounds. Not till this last point is thoroughly made is he prepared to call new words without help.

The nature of the instruction required in penmanship may be inferred from the fact that to write a word with ease requires a definite conception of the form of the separate letters, and the habit of moving the pen in such a way as to make these forms. Securing the first point requires the production of the forms by the teacher, and the calling of the attention of the pupils to all the elements of the forms, while the habit of moving a pen in a given way is secured only by moving it in that way. Instruction, then, in regard to forms of letters, and also in sitting, pen-holding, and movement, is to constitute the work of the teacher. This is to be accomplished by combining class instruction and drill with individual instruction.

Oral instruction in composition should include the formation and criticism of analyses so as to make them clear and logical ; the collection and arrangement of material ; the division of the work into paragraphs, and of the paragraphs into sentences ; proper punctuation, the arrangement of the composition on the page, and criticism of style. Reading and practice will do the rest.

I have now indicated briefly the work to be done, through oral instruction, in mathematics, the natural sciences, physiology, color, music, morals, and language. To these subjects I would add lessons on the general qualities of objects, whenever the teachers were competent to give such lessons. The object of this kind of work would be to form the habit of thoroughly observing everything that comes within the pupils' reach. It may be well to add that the list of topics here given is not intended to be exhaustive, but only to indicate those that seem to me essential to anything like a well-rounded preparation for a comparatively independent study of books. Indeed, I am inclined to go so far as to say that, in my judgment, a student is always helped in his reading upon any subject by a course of introductory lessons given by a thoroughly competent instructor. This is true of pupils in the higher schools as well as of those in the lower. These introductory lessons, or lectures, should accomplish two things : fix in the minds of the students, clearly, distinctly, and

vividly, the leading conceptions of the subjects to be treated, and also take the students over ground enough, and secure such work by them as will make clear to them the right method of study and establish the habit of following this method.

PLAN OF LESSONS.

Let us now consider briefly the plan or programme of lessons that must be arranged as a condition of doing this kind of work effectively.

Education, in the fullest sense of the term, implies the complete and harmonious development of all man's powers. The accomplishment of all this requires the systematic exercise of all his powers. So the education of a child in any one direction implies systematic exercise in the same direction. Object lessons, language lessons, — oral instruction of all kinds has of ~~one~~est failed to accomplish the work hoped for by its advocates for a lack of a well-defined plan upon which it should proceed. A few lessons have been given upon this subject, and a few upon that, with no definite intent, forming no part of a matured scheme, beginning nowhere in particular, and ending anywhere in general. Striking the keys of a piano at random is not learning to play. Promiscuous lessons on a variety of subjects, or any one subject, result neither in scientific knowledge nor good mental training.

The first requisite, then, for good oral instruction in any school or system of schools is a definite programme. Who can make it? It is too often left to the individual teachers, and sometimes to the youngest teachers. This is wrong, for most teachers are not competent for this work. The making of a good programme, as has well been said by one of our wisest educators, is the most difficult of all educational work : it requires the greatest ability and the broadest knowledge ; it should not therefore be intrusted to young teachers. School boards, as such, should never attempt it. It should be intrusted to a council of the ablest, the wisest, and the most experienced educators of the land. Ample time should be given for the consideration of every point of the programme, both in its direct effect upon the minds of the pupils, and in its relation to other subjects. No one branch of study should be admitted to or rejected from the programme, and the ground to be covered by no one subject should be decided upon, till the opinion of the wisest teachers of the world upon the point is known, and the question definitely asked and answered, whether the special conditions of the

case require any modification. And when a programme is thus made it should never be changed, except after the most deliberate consideration and for urgent reasons.

Now what should such a programme determine in regard to a course of oral instruction? First of all, the subjects upon which the lessons are to be given. These will depend somewhat upon the social condition and home training of the pupils, the length of time they are to remain in school, and the pursuits in life for which they are destined. A boy who is to continue at school but a few years may need to be differently treated from one who is to take a college course and study a profession. All must learn to read, write, and cipher, whatever else is neglected. Secondly, the programme should determine the number of lessons to be given upon each subject. It is not enough to say, teach color and form; for one teacher may have a taste for the one subject, and another for the other; so that in each class the one or the other will be neglected. Thirdly, the topic for each lesson should be given. I see no other way to secure the full treatment of any subject. If left to themselves, teachers of different grades are in danger of handling the same topics; so that part of a subject will be studied several times, and part of it not at all. And, finally, the order in which the lessons are to be given should be determined. It is of the utmost importance that each subject receive an orderly and systematic treatment. This is the only way in which perception, imagination, and reason can be well developed; the only way in which pupils can be trained to good habits of study; and the only way in which the best knowledge of the subject studied can be secured.

It may be objected at this point that the specific directions by the programme here recommended would tend to trammel the teacher, and that more latitude should be allowed for the exercise of individual judgment. If every teacher was a profound philosopher, the point would be well taken; but, unfortunately, we are not all of that class. And, besides, I have supposed the programme made by the highest wisdom attainable. There is another incidental reason why I would have a definite programme of oral instruction. It is much easier for a non-professional to examine in text-book work; and, consequently, where education is directed by those not skilled in the work, oral instruction generally receives little attention. The result in many cases is, that this kind of work is the merest farce. But the most inexperienced member of a school board can ask whether a teacher has completed the programme, and require to have a specimen of the work exhibited.

AIM OF ORAL INSTRUCTION.

But programmes will never make good teaching. Back of all and above all is the living teacher. If he is intelligent, good, and earnest, he does good work. One item of his qualification, in particular, I want to mention here. To be able to give oral instruction effectively he must know the true aim of the work. How often I have seen object lessons given when the teacher seemed to be merely fishing for words, — and fishing in a dry pool!

The true object of oral instruction I conceive to be threefold, — training, knowledge, and expression. It is possible to make either factor too prominent. We may make sharp intellects, that possess little valuable knowledge or power of expression; we may impart knowledge in such a way as to develop in our pupils little power either to think or to express; or we may make fluent talkers and writers, characterized by weakness and ignorance. Neither of these is the highest type of man. Perfection requires power, wisdom, and speech. It is not a sufficient recommendation, then, either of a subject of study or a mode of treatment, that it disciplines the mind. It is not enough that it makes the pupil wise, or that it makes him fluent of speech. The true test for every course of instruction, and for every lesson in the course, — and this is emphatically true of oral instruction, which fashions the mental habits, — is this: does it result in that self-activity of the pupils that gives them additional power to act; does the subject matter stand in such relation to human interests, and especially to the interests of these human beings, that the resulting knowledge will be of the highest practical value to them; and are they the better prepared to put themselves in communication and sympathy with their fellow-men? Oral instruction that will not bear this test should not be allowed to waste the time of pupils.

And here I might leave this part of my subject. But there is one error connected with oral instruction, in common with text-book instruction, so important, and at the same time so common, that I wish to point it out. I refer to memorizing the language of the instructor. It seems to me doubtful whether this practice is ever justifiable. As before said, language is for the expression of thought; and, if an oral lesson has not resulted in making pupils think thoughts that they wish to express, it might as well be considered a failure, and the language side of the lesson be omitted.

METHOD.

A few words on the methods of oral instruction, and I am done. The teacher's part in the lessons may be briefly described. He is, first, to furnish the material upon which the minds of the class are to be exercised, which may be material for the exercise of the perceptive powers, or of the imagination, or of the reasoning faculty, or of all together, according to the nature of the lesson. Secondly, he is to direct the activities of the children, both in the class and outside the class; for every lesson should require some outside work. Thirdly, he is to name the new objects, qualities, and relations that the children discover. And, finally, he is to teach the correct expressions for the truths discovered. This, let it be observed, does not require much talking. Were I to attempt to give a single formula, the observance of which would secure good oral instruction, it would consist of these words: *be silent*.

The work of the lesson, on the contrary, belongs to the children. This consists of two parts. The first includes exercises in observation, imagination, and thought. These are to be performed under the direction of the teacher. If the lesson, for example, is one in observation, the children are to observe the objects furnished by the teacher, and to observe the parts in the order directed; and then they are to observe objects, as directed, outside the class-room. If each child takes charge of himself, the teacher ceases to be a teacher. The second part of the children's work is the expression of the new knowledge they have gained. This should be done orally in the lower classes, and both orally and in writing as the pupils advance.

CONCLUSION.

I believe that in many schools in this country we are to-day acting as wildly, as irrationally, as foolishly, in attempting, through oral instruction, to relieve our pupils of the labor of overcoming difficulties for themselves by doing their thinking for them, as ever those old schoolmasters did, who fed their pupils on text-books from the beginning to the end of the year. If I must take my choice between all talk and all text-book, give me the text-book, and I will trust to future experience to make it comprehensible. And yet I believe that a course of oral instruction such as I have attempted to sketch is useful both as a means in itself of the best education, and as a preparation for the profitable study of text-books.

THE NATIONAL COUNCIL OF EDUCATION.

THE ANNUAL REPORT TO THE NATIONAL EDUCATIONAL ASSOCIATION AT SARATOGA, N. Y., BY THE PRESIDENT, THOMAS W. BICKNELL, LL. D.

THERE has long been a growing conviction among the leading teachers of the country, that our great annual gatherings of the friends of education could not be relied upon for consistent and weighty discussions, or for definite and satisfactory conclusions on any division of the broad field of instruction. These conventions serve an excellent purpose in bringing together large numbers of educators from all parts of the country, for social enjoyments and the stimulus of personal intercourse, with the added pleasures of summer journeying and recreation. It is apparent, however, that this Association will, with its hurried reading of essays, however able, with such discussion as may be struck out by a sharp assertion of the reader, before a restless audience widely differing in successive years, afford little opportunity either for calm consideration, candid criticism, wise discussion, or valuable conclusion on many of the complex questions and interests of modern education.

Even less fit for such purposes is the ordinary teachers' association, institute, or summer school of instruction, where the object is the training of inexperienced teachers by those who naturally enforce their own special theories and methods, with small opportunity for criticism as to the correctness of the principles underlying their theories. Unfortunately our American colleges are only just waking up to the intrinsic value and importance of the science of didactics, and to this moment no voice of commanding influence has gone out from them, to reach and control the teaching profession. The painful ignorance of the leading divisions of our journalistic and periodical literature, even concerning the facts and history of American education, and the crudeness of the numberless suggestions from this source, positive and violent in proportion to their ill-considered character, are too evident to every reader. Under this condition of things there seemed a necessity for the formation of a body which should be a component part of the great national association of the country, and hence in the largest sense representative in its character, which should consider apart by itself some phases of the great educational topics pressing for consideration, and give to this body, and through it to the educators of the country, such conclusions as deliberate counsels might reach. To this end was formed the NATIONAL COUNCIL OF EDUCATION, and in this first annual

report to this Association it is proper that I should give a brief outline of its history.

A BRIEF SKETCH OF ITS ORIGIN AND PURPOSES.

In July, 1879, there appeared in the editorial columns of the (New England) *Journal of Education* an article setting forth in general terms some of the advantages that might arise to the cause of education in America by the formation of an association composed of our best thinkers and workers, who should hold stated meetings of several days' duration to consider with one another some of the more important educational questions of the day, and who should give to the public from time to time such conclusions as might be arrived at, after careful study and a more thorough discussion than could be secured in any of our then existing organizations. It was suggested that a large number of persons could be selected from the various States, whose individual studies and pursuits had made them experts in educational work, and the results of whose combined deliberations and conclusions would advance educational science.

The article attracted attention and received favorable comment from the educational press, and from our brethren in other prominent educational positions. From a leading educator in Pennsylvania came this word: "We want to reach down deeper and up higher; we want to solve hard problems, and make crooked things straight. Popular assemblies of teachers are valuable for certain purposes, but they furnish little or no opportunity for close and critical investigation."

Said a Nebraska educator: "The suggestion of a national council of education is a good one. I venture to state some of the points that such an organization should provide for.

"I. It should be distinctively a conference for the discussion of living educational questions by those who have made such questions a study. Elaborate essays and speeches should be a subordinate incident rather than a leading feature of such a meeting.

"II. The body should be representative, and not too large.

"III. It should remain in session long enough to form acquaintanceship, and to consider with calmness and deliberation the questions referred to it."

Dr. Orr, commissioner of schools of Georgia, wrote: "I look with great favor upon the suggested formation of a national council of education. Such a body would doubtless be able to accomplish much good by a free discussion and the frank interchange of views, and above all by concerted action looking to the educational advancement of all portions of our country."

The hearty indorsement of the Eastern States is well represented by a short quotation from the letter of the present secretary of the Board of Education of Massachusetts, Hon. J. W. Dickinson. He said: "I am greatly in favor of the formation of a national council of education. It seems to me that the leading educators of the country should now work together in forming plans for future educational work. If there is to be that unity of sentiment throughout the country that is necessary to a united country, it must be brought into existence by uniting in our systems of education. To secure this we must have one organization made up of leading men from all parts of the country, which shall bring together, and into sympathy, those who are and those who are to be the leaders in our educational affairs."

These four letters, from the four quarters of the country, but express the thoughts of the whole mass of correspondence received on this subject. Organized, deliberative consideration and counsel seemed to all the need of the times. To follow up the discussion thus begun on this subject, I was invited by President Newell, of Maryland, to read a paper before the superintendents' section of the association, held at Washington, February, 1880, on "The Proposed National Council of Education." In that paper the writer attempted to show some of the reasons for the organization of such a council, a method of organization, plans of work, and some of the results that might be expected to flow from its work. In order that I might clearly get the ideas of others with reference to the formation and purposes of the council, a circular was sent to a large number of persons holding important educational positions, asking their views on several leading points, such as *organization, membership, plans*, including authority and relationship to other associations and to the local and general administration of schools. As was expected, a great variety of opinions was received touching each of the points under discussion. As the vital questions related to the scope and authority of the council, it will be quite proper to give some of the answers covering these points.

Said one: "The scope of the council should be the discussion and settlement of the fundamental principles of teaching, and the development of plans and methods for making the work of our public schools in particular, and of all instruction in general, more effective." In this definition of the council only one distinctive feature is presented, and that is the declarative settlement of certain principles of educational science.

President Haven, of Syracuse University, wrote: "The work of a

council should be chiefly investigational and recommendatory. Every document, before being given to the public, should be thoroughly discussed, and, if the members desired it, their opinions expressed in the discussion should attend it, unless shut out by a vote of the body."

Said the State superintendent of Michigan: "The moral influence of such a body would be very great, and would, I think, be weakened rather than strengthened by legal authority."

Dr. Newell believed that the authority "should be only advisory, but on all educational matters."

President Brooks, of Millersville Normal School, Pennsylvania, said: "The general scope of the council should be advisory. Properly constituted, its decisions and recommendations will carry great weight, and be influential in moulding the educational system of the country. Its best and strongest influence will be in its own strength; that is, in the strength and wisdom of its members."

Superintendent Sabin, of Iowa, gave the opinion that local questions should not be touched, "but that the council should look to the formation of a body of doctrine, educational in its character, but distinctively American."

Superintendent Phelps, of Minnesota, wrote: "The general scope of the work should be the consideration of those questions which most immediately concern the efficiency and progress of the system of education. The first council should take up these subjects in the order of their importance. It should not attempt too much." "The authority of the council at first would be only such as the *character* of its members and the *wisdom and justice of its conclusions* would give it. The time may come when legal sanction could be given to its conclusions. That would, however, depend upon the *weight* of its conclusions."

Professor Payne, of Ann Arbor, was of the opinion that "the council should be a deliberative body for the discussion of great educational questions."

President Pickard stated that "the object of a council should be the discussion, in a philosophical method and spirit, of the vital educational questions of the day, not in public assembly, but in quiet congress."

President S. H. White, of Illinois, believed that the council had other work than was done by any existing organization. "There should be authority, else the council can do no more than present organizations. It seems that it can only be advisory, — and here lies the weakness of our educational and of our political system: there is need of a spinal column somewhere."

Miss Bibb, of Missouri, was of the opinion that the office of the council could be only advisory. Its province should be to study and develop educational science by the aid of such facts and statistics as may be obtained through the Bureau of Education at Washington.

We have thus given briefly the views of a few representative persons as to the scope of such a council as was proposed. From these and other important recommendations a committee of ten, appointed at Washington, proceeded to form a plan of organization, which was presented to the National Association at Chautauqua, New York, July, 1880. After a full discussion by a large and able committee of the Association, to whom the report was referred, the general features of the council were recommended and adopted as they appear in the Constitution of the Council, and the following officers were elected : —

President.—Thomas W. Bicknell, Boston, Mass.

Vice-President. — James McCosh, Princeton, N. J.

Secretary. — Louis F. Soldan, St. Louis, Mo.

Executive Committee. — E. E. White, Indiana ; J. P. Wickersham, Pennsylvania ; Anna C. Brackett, New York ; William H. Ruffner, Virginia.

The Council, thus organized under such rules of action, has held two meetings,—the first at Atlanta, Ga., in July, 1881, and the second at Saratoga, July 6–14, 1882, reports of which may be found in a pamphlet issued by the Council, containing the Constitution, By-Laws, Membership, Committees, in addition to the Reports in full as adopted by the Council.

I have here stated in brief the leading ideas of those most deeply interested in the formation of the Council, and will add some considerations as to its province.

There is no more pressing need in the national educational field to-day than this movement in which we are now engaged : the gathering of representative educators of the country into a deliberative body, with the object of surveying the entire field of operations, and discussing every important fact and development in American school life, laboring to harmonize conflicting opinions, or, at least, to report how far rival methods are complementary and not destructive of each other, and at its own option, without haste or heat, announcing its conclusions to the public.

Of course such an attempt may fail in numerous ways ; but the very effort to accomplish an end so important is itself a worthy purpose for the ablest thinkers and teachers ; it will help to soften pedagogic asperities and possibly check the growth of hostile schools and

parties contending with the bitterness and bigotry that are the certain accompaniment of intense earnestness and narrow views.

The importance of such a council becomes more evident when we consider the present condition of American instruction in distinction from the school life of the Old World. In every European country the government assumes, not only the supervision of university, popular, and professional education, but also, through boards of experts, elaborates the methods of organization and instruction and enforces compliance with all the weight of centralized power. But in our country the State attempts this function only in the cases of a few universities and normal and technical schools, leaving the vast realm outside these points to the unobstructed action of the people in their several localities. The organization, rules and regulations, courses of study and modes of teaching, in the majority of our collegiate and academical schools, depend largely upon the accidental head of the institution, as he may be influenced by his own special environment. Too often the most powerful influences upon such persons are social, sectarian, even pecuniary or personal, to a degree that leaves small educational value to their decisions. In the public school this work is assigned to boards of trustees and school committees, few of whom pretend to have any special capacity for their difficult work. As a matter of fact, the actual labor usually falls upon the superintendent or the little group of teachers supposed to be most competent. •

It is a startling thought that the entire educational work of this nation to-day is really in the hands of teachers employed by the people, and responsible only to school committees and corporations whose fitness to formulate a consistent system of education and supervise its workings is not asserted by anybody. Nine tenths of these teachers are in no way professionals. Their terms of service and places of occupation are short and changeful, and there are few communities in which the school life goes on with any marked consistency. And there is no prospect that our people will be induced to change this habit. All the elaborate schemes drawn up by educators with European tastes fail at this point. They assume a willingness among our people to be supervised by a commission of irresponsible experts, which is entirely foreign to the national habit.

For better or worse we are trying to build up an effective system of education by the voluntary action of the people, responsible in the last result only to its creators; and wisdom consists in ascertaining the best way for bringing the ability and experience of the superior class of teachers to bear upon the general public, the boards of school control, and the multitude of untrained and transient school-keepers, to

whom are intrusted so many millions of children. But this condition of educational affairs is not without its advantages. The American people surpass all others of ancient or modern times in quickness of apprehension, openness of mind, intelligence in all matters relating to the conduct of life, and the power of adaptation to circumstances.

Thus in every community where the people have seriously undertaken the education of the children and brought to bear upon it their best available thought and experience, there has been a success, often of great value. The observer who looks in upon the school-keeping in thousands of little neighborhoods, in all parts of our country, will often be delighted by original methods and admirable results struck out by school authorities and teachers full of earnest desire and practical faculty. The great variety in the percentage and nationality of our school children, especially in cities, and through new States, is a constant stimulus to extraordinary effort by their teachers. Every year a swarm of energetic teachers is transferred from the old fields of routine work to newly settled communities of active-minded people, where the new foundations of the school can be laid by the help of all previous experience, and every aspiration for superior work have full opportunity for experiment. Thus it has happened that, within the past twenty years, a vast system of instruction has come up in the new States between the Alleghanies and the Pacific, in which the most advanced ideas and effective modes of instruction from all countries have often been incorporated with remarkable success. The influence of the Northwest on New England school-keeping during this period has been one of the most powerful factors in the great change that has come over this most conservative portion of the North. And now the waking up of the Southern people to the inauguration of the public school, and the establishment of the great mission colleges for the freedmen through these States, are opening up a fresh realm for the most interesting results. The primary work now going on among the negro and Indian children will be found to be the most vital test of our new theories of elementary training; and it is not unlikely that our Southern States, within the coming generation, are destined to make the most important contributions to the science of instruction. Indeed, the most accomplished European teachers, like Agassiz, find in the vast and varied opportunities of our new country many things to modify the scholastic theories and rigid practices of Old-World pedagogy. While it would be foolish to deny the importance of the Old-World education, it may safely be affirmed that nowhere in the world will the

careful and open-minded observer come upon so many interesting, original, and practical suggestions for the instruction and discipline of the young as in passing through the different States of our country. Even the different neighborhoods of the same State will often afford such an observer a field of investigation of singular breadth and variety. Here, as everywhere, the American people, without being indifferent to the opinion of European critics, will persist in working on its own line of operations, convinced that in the long run an intelligent and free people, made up of the most forcible elements of population from every land, is a more reliable basis for the best scheme of education than the exclusive experience and speculation of any class, however superior.

But just here is found a weighty reason for the establishment of a body like the present Council. These brilliant results of our new school-keeping are commonly wrought out by teachers whose original faculty and executive force are greater than their breadth of culture or philosophical habit of generalization. They are often achieved on such peculiar classes of children, under such unusual social conditions, that it is very difficult to estimate their relative value in a general system of national culture. For example, in an old and cultivated community of the North, where the every-day life in a good family is the best school of the mother-tongue, it may be accepted without question that the thorough study of the Latin language is a most important help in the comprehension of English; but to a class of negro pupils in a Southern mission university, who have no reliable mother-tongue, and whose daily life is an experience of semi-barbarism and conversation, a plantation patois, the attempt to teach a classic language may only plunge the learner into a life-long muddle, and destroy his only opportunity of learning to "speak and write the English language correctly." In a new city, with a limited class of trained teachers, it may become an imperative necessity to make appointments virtually during good behavior, for only thus can a substantial system of schools be built up. But in a State like Massachusetts, swarming with graduates from the higher schools, with sharp competition in all the upper walks of life, such a policy might fix the public schools in a hopeless routine. In New England there is a growing class of professional schoolmasters, who have trained themselves by faithful study, at home and abroad, for the most responsible work of instruction. In the new West this class is yet small, and the men who aspire to mastership are too often enterprising young graduates, or non-graduates, trying to keep afloat while studying for another profession. In such communities it may be

perfectly legitimate to promote the most energetic class of young women to these difficult positions, almost to the exclusion of men, while a similar course would be unjust and absurd elsewhere. So with almost every theory of instruction, or method of discipline, or plan of organization, that has been an especial success in any especial locality.

Of course, the man who has become famous as its representative is easily convinced that his plan includes the sum and substance of the matter. He appears in convention brandishing his brilliant essay, which, like the patent sweeper, cleans the street from curbstone to curbstone of everything in its path. Just now, the great importance of industrial training for the lower classes of American children is bringing out a shower of contemptuous, indignant, and infallible judgments against our whole system of public instruction; or the scientific expert is moved to say that the life is not worth living, and the school not worth keeping, which is not concentrated in the intense and engrossing study of some aspect of physical nature. Everywhere among our ardent and successful teachers we find ourselves inspired as in the presence of prodigious, original power, assured that never were so many bright and beautiful things done with children since the foundation of the world; yet everywhere we are worried and confused by the narrow, partial, local, and often merely personal, point of view of this forcible man or woman, buried up to the eyes in one little section of school work, like the bee smothered in the honey of its own cell. It is this which makes so many of our conventions the stamping ground of furious pedagogic partisans, bringing out the worst instead of the best side of the disputants, and sending their wisest members home resolved to save their money and their temper by keeping away in future from gatherings of that sort. And generally it may be said that the teaching fraternity and the people of our country are failing to realize the value or appreciate the results of a great deal of the best school work now done, because there is no central body of superior schoolmen lifted above this turbulent region of transient work and heated controversy, devoted to the study of our national education in all its aspects, and prepared to pass intelligent judgment on its varied developments. It must be evident that such a council, organized with care, deliberating apart from the excitements of a popular audience, with time and opportunity for comparison of views, and not compelled to premature declarations of opinion, can be of incalculable service to the education of the country. Such questions as the basis and limit of moral instruction in public schools; the relation between

scientific, classical, and literary training in the universities ; the best methods of normal training for teachers of every grade ; the most difficult problem of the arrangement of the country district school ; the time at which industrial education should be introduced, its proper nature and connection with the present style of school work ; the vexed question of coeducation ; the support of the higher education by the state, and the extent to which it can profitably be directed by the church ; the whole series of practical inquiries which bear upon the establishment of a true profession of teaching ; the duties of each part of the country to the other, and the best method of concentrating the influence of the whole school public upon Congress to insure national relief for the perilous illiteracy that threatens the national life, — these, with numerous other questions, some of them lying at the basis of a sound philosophy of the mind, and dealing with the very elements of child-nature, will come up before such a body of schoolmen. It will be for them to ascertain how far apparently contradictory theories may be complementary of each other ; to enable the fervent disciple of practical method to appreciate the value of what has seemed to him mere empiricism, and, in matters only partially developed, to advise patient waiting and careful investigation as a condition of future judgment. When a principle is recognized as established, or a class of methods seems to be valuable within certain conditions, it will be a great help to the public to receive an overwhelming testimonial to that effect. When the Council sees fit to inform the country that certain other opinions and practices are only tentative, it will do much to calm the heat of popular discussion and save inexperienced teachers from wild and mischievous experimenting with the children. The spectacle of such a body of eminent teachers honestly facing and calmly discussing these questions, and stating their conclusions with perfect frankness and honesty, will do more to attract the attention of the thoughtful classes than all the vehement appeals of the zealous apostles of universal intelligence.

And if it is said that no considerable body of teachers can be found capable of this philosophic and moderate habit of dealing with questions so exciting, we reply that the honest attempt at such consultation will be the most valuable discipline for those whom the people have called to the highest positions of educational trust. Surely nothing can be more disastrous to our children and youth than the present state of contention among this class. While they are divided into schools of heated partisanship, there will be perpetual temptation to that undignified intrigue and those violent excitements which

often result in the decision of the most delicate and vital questions by school committees demoralized by the conflicts and infuriated with the lowest partisans of the political caucus. The fact that there is such a council of leading educators in constant session will be a warning to ambitious young teachers and greatly assist intelligent laymen in their duties of school administration.

And now, if it be asked what promise there is that the most emphatic decisions and suggestions of such a council will be received with respect, either by the mass of teachers or the school public, we reply, this is the last thing for which such a body should concern itself. Each member of the Council well knows that his individual opinion in his own community has great influence. Indeed, it may be said that the entire educational policy in our most important cities and States is being shaped by the individual convictions of the few powerful and successful people who are placed at its head, or who direct those that supervise only in name. How much more then will a fraternity of these influential people be able to accomplish or hinder, when speaking with a consensus of weighty opinion, after careful deliberation, with a single eye to the truth and the welfare of the children! No other people so quickly respond to this, the highest form of authority, as our own. Especially, if this Council can learn to put away pedagogic conceit and asperity, to rise above the cultivated contempt for popular institutions and that scientific scorn of the common mind which is the dry-rot in so much of our new superiority, and to bring itself into the most hearty sympathy with the masses of our countrymen in their great longing and hope for the youth, will it gain the public ear and win the public confidence, and obtain all the influence it deserves as a representative of the unfolding life of the new republic.

ADDRESSES

OF

DEPARTMENT OF HIGHER INSTRUCTION.

THE PLACE OF ORIGINAL RESEARCH IN COLLEGE EDUCATION.

BY JOHN HENRY WRIGHT,

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At the present time, in the discussion of the problems of college education in this country, attention is directed mainly towards methods, and not as heretofore chiefly towards the subject-matter of higher instruction. The war that was strenuously waged, a decade and more ago, against the claim of classical and literary studies to occupy a foremost place in a liberal education, has somewhat abated in violence. The wise words upon the matter, uttered at St. Andrew's by John Stuart Mill,¹ were not without their effect upon a generation that delighted to acknowledge him as teacher and guide; not to speak of influence of other thinkers, nor of that reaction which, in the world of mind as well as in that of matter, is sure to ensue when nature's true mean has been overleaped. The prayer of Goethe, "the most modern of moderns," that the study of Greek and Roman literature might ever remain the basis of liberal education,² is likely long to continue to be the wish of all who have a clear understanding of what a liberal education is. The Greeks and Romans are, more or less directly, our intellectual ancestry; and in these days when much is made of the doctrine of heredity, it is everywhere recognized, and most of all, perhaps, by those who possess the genuine scientific spirit, that a knowledge of one's intellectual heredity is of the utmost moment to him who would become master of himself and of his age, in the commonwealth of letters and science, — a commonwealth that knows the limits neither of time nor of place in its citizenship.

"Antiquity deserveth that reverence," says Lord Bacon,³ "that men should make a stand thereupon and discover what is the best way; but when the discovery is well taken, then to make progression."

When the discovery is well taken, then to make progression; it is with this phase of the subject that scholars are nowadays concerned: not with the question whether, after all, antiquity deserveth the reverence that it should be the basis of education, but as to how, granted this starting-ground, progression shall be best made. The evidences of this fact are to be found in the character of the principal changes that have been introduced, within the last few years, into our higher collegiate education. I will speak of three

such changes. In many of our leading colleges and universities the belief is gaining ground, and to a considerable extent has been put into practice, that, after the student has laid certain foundations essential to all liberal culture, his intellectual growth is more securely achieved by leaving, in part at least, to his own choice and tastes the character of the superstructure, than by compelling him undeviatingly to pattern after one model. Further, in regard to the chief object in view in the study of the so-called classical languages, and as to the best way of reaching this object, there has come about a change of feeling among teachers. The texts of classical authors are now read, not as convenient illustrations of grammar, mythology, prosody, and the like, but as an end in themselves; and grammar, mythology, prosody, archæology, when studied in connection with the reading of authors, are treated as means entirely subordinate to this end. By the wide-spread introduction into, and the emphasis in, our courses of study of what is known as "reading at sight," remarkable results have been reached. It is confidently believed that the younger generation of classically educated men are learning to read ancient authors as they read authors of their own or of a foreign tongue, and that the day has gone by when these languages can be spoken of as dead unto the men who have honestly learned them in our best colleges, except by a most superficial use of words. Again, the subject-matter of classical philology is approached and treated in a different way from that current a generation ago. Under the influence of the scientific spirit which is entering upon all domains of knowledge, *res non verba quæso*, in literature as well as in science. As the *Saturday Review* tells us, "Cambridge, England, the head and front of old verbal scholarship, is transforming her classical curriculum. Not through mere linguistic attainments, but through scientific philology, scientific archæology, scientific study of ancient history and philosophy, will henceforth be the road to her brightest honors." And what is here said of the English university is more and more getting to be true of the leading centres of our own American academic life.

If such, then, is the general tendency of interest, — towards the methods rather than the materials of the liberal education, — I cannot but believe that, in inviting your attention to the consideration and discussion of *The Place of Original Research in College Education*, a question that concerns itself almost entirely with method, I am doing the cause of higher instruction a timely, and perhaps a not unimportant, service.

In treating this subject, the main course of thought will be upon

the following lines : I shall attempt, in the first place, to make clear what is to be understood by original research in college education ; then, to describe with some fulness of detail how and with what extraordinary results work of this character is provided for, encouraged, and carried on in another land and under an educational system quite different from our own ; in the third place, to make a few suggestions as to how, under our peculiar conditions, it might be called into being and activity in our colleges ; and finally, to press with urgency the principal reasons that should lead us to a reform in this direction. Each one of these lines of thought will sustain and illustrate the others, and it will not be necessary to keep them carefully distinct in the sequence of the discussion. There can be no better way of suggesting how original research may be arranged for than by presenting concrete instances of organizations and institutions, in other lands or in our own, where such work is done, and no better argument for it than the good results that have actually been found to flow from such institutions.

The general sense of the expression "original research" requires no definition ; but used as it is here, in connection with a college education, and as the most convenient approximate designation of the thing I have in mind, it needs limitation and explanation. Original research, as the term will here be used, is, in the first place, work pursued in subjects embraced in college instruction ; and, inasmuch as the major part of the college course is made up of linguistic, literary, historical, and philosophical studies, the topics of inquiry will ordinarily be drawn from these fields, although physical science — with which we are apt, perhaps almost exclusively, to associate the idea of original research — will supply its share of subjects. The essential character of such work is that it both consists in, and is based upon, direct personal observation and actual examination, together with inductions suggested by the facts investigated and discovered, — inductions and inferences independently made by the inquirer, made originally in that they are arrived at without outside help. Sometimes the record will be memoranda of observations only. Such work in some cases, however, may be original inferences from data in part furnished by others, data personally tested and verified, the independent, fresh treatment of an old subject. In every case it is work that essentially calls into play the creative mental activities. In its prosecution the mind necessarily abandons the passive, the receptive attitude that it is obliged to assume throughout the larger part of its training, particularly in the earlier stages.

In history, it will be the examination and delineation of an event

or epoch or institution from all the earliest accessible records thereof. In biography, it will be the re-creation of a personage from all the independent data left concerning him. In language, it will usually consist in the statement and classification of facts of linguistic usage based upon the study of authentic texts. In literature, both ancient and modern, it will rest upon and be conditioned by broad, comprehensive, and accurate reading of original documents, and will consist in analysis, inference, combination of conclusions, independently performed and recorded in carefully written theses, commentaries, or monographs. In physical science and natural history, it will be work done in the laboratory or on the field, — work guided, it may be, by the experience of others, but prosecuted without foreign assistance. And in the recorded results of all these studies the matter of chief consequence will be, not their rhetorical finish or flourish, but the earnest, independent work, the exact observation, and the hard thinking that they represent.

In most cases the results reached cannot be absolutely original, but they are sure to be relatively original if honestly attained; while the educational effect upon the student of the intellectual operations passed through is quite as great as if the outcome of his work were absolutely new truth. It is the attitude and activity of the mind that is of main moment.

Such are some of the leading characteristics of what I have called original research in a college course of study. Before passing on to suggest how it may be provided for in our own country and before urging its high importance, let me bring to your attention, from the educational system of Germany, a nexus of institutions by which work of this character is called into being, recognized, and fostered. These institutions are the so-called *Seminarien* (seminaries for special departments of knowledge), and kindred organizations, to be found connected with all representative German universities. Historically these seminaries had their origin, early in the last century, in the want felt of well-trained teachers for the gymnasia and higher schools. At the present time, however, while they satisfy this want, they do it only indirectly: they are now essentially and principally nurseries of science and philology. The seminaries were instituted that theological students, who expected to teach on the way to their profession, might receive special pedagogical training in the subjects in which they would be called upon to give instruction in the schools. As the subject-matter of liberal instruction was mainly the languages and literatures of Greece and Rome, the seminaries naturally became philological in character. The first seminary that

actually assumed the designation of philological was that founded at Göttingen in 1733, by Gesner the famous Latinist.⁴ This seminary has been in many respects the model for all later ones. But toward the close of the century, a little less than a hundred years ago, these institutions underwent a remarkable development. This was due to the labors and influence of Friedrich August Wolf, a genius who marks epochs in general literary criticism, and in classical philology as well as in the higher education.⁵ Wolf gave these seminaries a much higher character than that of mere normal institutes. In his address at the opening of his seminary at Halle (1787), he said that the object in view was not only to fit competent teachers for important posts, but also to revive a dying love for classical studies. He succeeded in this twofold object. He succeeded not alone in fitting competent teachers, but in bringing into being a new profession of higher school teachers, a profession totally distinct and separate from that of theology. This profession now exists in Germany alongside of the law, medicine, and the church. For it years of severest study and training are demanded, and to its existence is largely due Germany's leadership in the domain of philology,—a leadership and mastership that often makes the performances of scholars in other lands appear as mere child's play. Wolf also reformed and revived classical studies, and his influence in this direction was felt in other departments of learning and research as well. Men that had learned in Wolf's *Seminarium Philologicum* the master's scientific method in the investigation of classical subjects—a method to which in its more perfected stage I shall have occasion to advert—used it with signal effect in other fields; the study of history and of general literature, of the documents of theology and of law, became revolutionized. Scholarship ceased to be dull and pedantic; it became the business-like activity of serious men. Wolf breathed into his pupils his own energetic spirit. And all these changes were brought about, far more through the direct and personal influence of the master, exerted and felt in the seminary, than by his published works, or even by his university lectures.

There are at the present time, connected with the better universities in Northern Germany, seminaries for nearly every great department of knowledge. These institutions are under the immediate direction of the leading university professors, and are under the patronage of the state, which pays a small salary to the director and to the student members. The latter receive about forty dollars annually. The active membership of the seminary is usually limited to a very small number, from ten to fifteen, and admission is obtained

only on meeting severe requisitions. The sessions of the seminary, which usually take place weekly and last for two or three hours at a time, are open to the public. Frequently a seminary is provided with a library and a room where the members meet and work together in preparation for the public exercises.⁶

The leading seminaries at a university are ordinarily the philological and the historical; next come the seminaries for law, for practical theology, for classical archæology, for the German language and literature, for English, for the Romance languages, for mathematics, for natural science, etc., and in some universities one for the science of pedagogy.

The object of these institutions is best set forth in their statutes,⁷ from which I translate. The Historical Seminary at Breslau⁸ has for its "aim to introduce its members into scientific methods of historical investigation and exposition." It has three sections, independent of each other, for ancient, mediæval, and modern history, respectively. The Historical Seminary at Bonn⁹ professes a similar object, but in its four sections pays great attention to the sciences auxiliary to history proper, to chronology, to political geography, to statistics, and the like. The opening paragraphs of the statutes of the seminary for law at Berlin read as follows:¹⁰ "The Juristic Seminary aims as its chief object to give to students of the law an introduction to personal scientific work on the subject of law, by means of original exercises in the exegesis, history, and principles of law, and thus to prepare them for independent scientific research. This seminary is divided into three sections, for Roman, for German, and for canon law, respectively." The aim of the Mathematical Seminary at Berlin is thus given: "The seminary for the training of students in scientific mathematics is a public institution in connection with the university, which aims to give to students, who have already obtained a certain amount of mathematical knowledge, an introduction to scientific mathematical analysis and computation, and, by making them acquainted with all the helps both of theory and in practice, to train them to skill and accuracy."

The regulations of the Philological Seminary at Königsberg present us the type of this class of institutions.¹¹ "This seminary has a twofold aim: first, as regards students who devote themselves exclusively or principally to the study of classical antiquity. It endeavors, by a variety of practical exercises which shall introduce one into the very heart of philological science, and shall train one to methods of research, and by literary helps of all kinds, to provide opportunities for self-culture and education, in order that classical

studies, by men thus trained, may be maintained, perpetuated, and enlarged. In the second place, in reference to students who, while interested in classical philology, do not make a specialty of it, the object of the seminary is to provide an opportunity for obtaining a more vivifying discipline in such studies than is attainable through mere attendance at lectures. . . . The essential characteristic of all papers submitted to the seminary must be that they present results, even if incomplete, arrived at by personal investigation and independent research, not thoughts long familiar to the writer and hastily heaped together. Long and careful preparation is insisted upon; the authors discussed must be read through and through many times, and the work done must be thorough. . . . The public exercises of the seminary are to occupy four hours weekly. They are to consist, (1) in the reading of original papers, and (2) in oral discussion. The papers presented are to discuss (*a*) topics taken from any department of classical study, and (*b*) difficult passages from classical authors. The oral discussion will comprise (*a*) careful and searching criticism of the papers presented; this discussion is to be opened by two members called *Opponenten*, to whom the paper must have been submitted eight days previously, and to be closed by the director, who also must have seen the paper at least two days before the meeting. Besides the work above outlined, the members are (*b*) to take turns in the oral translation of Greek and Latin authors (the Greek prose writers being turned into Latin prose). They must be ready to defend their translations; to indicate all sorts of peculiarities in the passages rendered; to suggest emendations of corrupt places in the text; and, by comment and illustration, to make clear whatever may remain obscure to their auditors. . . . The language to be used throughout, both in the written theses and in the oral discussion, is the Latin."

There is one brilliant example of a German seminary which it would be inexcusable in me to leave unnoticed. It is the Bonn Philological Seminary as it was between 1839 and 1865, under the directorship of Friedrich Ritschl, a striking illustration of the wonderful power of a useful institution when inspired by a man of genius.¹² Ritschl's fame as a scholar, and his skill as a director, attracted, for many years, ambitious young men from all parts of Germany, and from other lands. His seminary became a busy workshop, the centre of university life, and thus the source of influences that were felt all over the civilized world. It became the model seminary, and Ritschl was frequently asked for advice by scholars in various lands who wished to establish similar institutions.

In a letter¹³ to a Greek professor in Finland, who had asked him

for suggestions, Ritschl gives his views as to the value, object, and essential features of an ideal seminary. His words have an importance quite beyond the occasion which called them forth. Ritschl asserts that if classical studies flourish in Germany more than in other lands, the cause is to be found nowhere else than in the philological seminaries of her universities. As an incidental proof, he calls attention to the total revolution that had taken place in Austrian higher education within a generation. It was only within that period that seminaries and the methods of seminary training had been introduced into the Austrian universities, and the results were a thoroughly competent corps of gymnasial teachers, and a reformed higher education, in which Austria, at the time of his writing, was not behind her sister states. The greatest need for the higher education is competent gymnasial teachers. For the training of these more is needed at the university than the mere hearing of lectures. Lectures present only the theory and items of knowledge: they work upon the student's mind from without. The future teacher needs, more than anything else, skill and method in his studies, and these can be gained only by the exercise of his powers and by putting to practical use knowledge already obtained. The seminary does not now have directly in view the practical training of young men as future teachers; skill in teaching is won only by the actual practice of the profession. The seminary endeavors to bring about independent personal activity; it disciplines men to facility and skill in research. It does this by requiring that studies shall proceed from a critical and scientific basis according to exact methods. The intellectual operations thus performed by the student himself and not merely heard about, as when he listens to lectures, become part of his flesh and blood, his own inalienable property. "For my part," continues Ritschl, "I will not withhold a twofold confession. The best that there is in me as regards philology I owe to seminary exercises under my teachers Gottfried Hermann in Leipsic, and Karl Reisig in Halle; and the best that I have done as a university professor, at all events the most tangible, the most permanent good that I have wrought, has been in the work of the seminaries over which for thirty years I have had the good fortune to preside. . . . There is one condition that is absolutely essential to a successful seminary: all its members must be thoroughly grounded (*sattelfest*) in the grammar of the classical languages. The seminary is not the continuation of the gymnasium. . . . In about four years after the establishment of a well-managed seminary there will go forth a band of skilful scholars, competent to teach; six

years later the number of teachers thus trained will be large enough to exert a marked influence upon the education of your country, and in fifteen years your schools will be in the hands of an entirely new generation of teachers." In a subsequent paper,¹⁴ Ritschl expresses the belief that young men ought to enter the seminary early enough to allow them to spend at least two years in its work before leaving the university. The younger the members of the seminary the deeper and more permanent is the influence exerted upon them.

Ritschl devoted himself tirelessly to this work, giving up his time, his strength, his books, for the sake of his disciples ; never, however, doing it in such a way as to relieve them from the necessity of doing most of the work themselves. He never, for example, gave a man a subject to work upon, either in the seminary or for a doctor's dissertation, though often he suggested themes from which a selection might be made. In his conduct of the seminary, as in his public lectures, there was a kingly power about him. Latin was the only language to be heard in the seminary, except when at times in order indirectly to rebuke stupidity or slovenly work he would drop into drastic German, as if the Latin were unintelligible to the delinquent. The work of the seminary was often planned with great system. For a given time it would gather upon a connected group of subjects, and the combined results of these special studies were often an important contribution to science and to literary history. Thus it was now that certain poets were studied ; now historians and orators, philosophers, grammarians ; subjects approached from various points of view, as the biographical, the critical, the linguistic, the literary. Many of the most brilliant enterprises of recent classical scholarship were conceived in this seminary, though years may often have elapsed before maturity. This institution filled the higher schools and gymnasia of Germany, and to a certain extent the philological chairs in the universities with skilful teachers, with men who by actual practice had learned to investigate, to think for themselves, and to treat their themes with masterly hand.

Ritschl profoundly impressed himself, his ideals and his convictions upon all who came in contact with him. His conception of the character and object of philological study has thus become, through the wide-spread influence of his pupils, the conception of all educated Germany. Under Ritschl's influence young men came to feel a vital interest in their work, to entertain profound convictions as to the dignity and high value of scholarship. Classical literature and the monumental remains of ancient art were to them no longer so many scattered, disconnected fragments, interesting as mere curiosi-

ties, for the entertainment of the pedant or for the amusement of the lover of bric-a-brac. What has survived to us from the past is rather the ruin of a wonderful civilization, and classical studies have their noblest activity in the reconstruction of this lost world.¹⁵ It is work of the highest order; it calls into play the profoundest energies of the mind of man. There is nothing in the past, however obscure, but that by right investigation it may be found out.¹⁶ Every student should have his own especial part in the work, coming to it with his best skill, and performing it, because of his concentration and singleness of aim, better than it could be done by any one else in the world.¹⁷

I have thus attempted to outline the general features of German university seminaries and to call attention to the influence they exert, by presenting concrete cases. But they are not the only German institutions that have as an end in view the training of the mind and the advancement of scientific knowledge by the encouragement of original research. As their membership is restricted to a very small number of picked men, there are many students who cannot gain admission. For these, however, as for all, ample provision is made. There are in each university many private societies for research in special lines. These associations, societies, clubs, as they are indifferently styled, are generally conducted by men who stand at the head of their departments as recognized authorities, and they bring into intimate relations professors and students. As examples of such private societies I will mention a few that were in active operation last winter at Leipsic: societies for dogmatic theology, church history, New Testament exegesis; canon law, civil law; the Arabic, Hebrew, Sanskrit, Scandinavian, Romance, and English languages, respectively; Greek and Latin grammar, Greek literature, Greek antiquities, Roman antiquities, classical philology, comparative philology, palæography, ancient history, logic, history of philosophy, and so on.

It would seem that these private societies with the seminaries would offer all the opportunities for training in original research that could be used. There are, however, still other organizations of similar aim and influence: philological and scientific unions composed of, officered, and entirely managed by students. These bodies are often large, some of them are well known: they always make a most important element in the intellectual life of the university. Ritschl's estimate of their value is expressed in the words, *Philologische Studentenvereine, allerherrlichstes Incitament*.¹⁸

The German university system finds in the seminaries, professors'

societies, and students' unions its most important and efficient aid. The German university aims to educate, by combining in the work of one corporate body both instruction and research ; to educate, by increasing as well as by transmitting inherited knowledge.¹⁹ The deficiencies of the lecture system of instruction — which we have seen the Germans fully recognize — are made more than good by the work of the seminaries. All foreigners who visit and study the German universities find nothing in them that is more admirable and useful ; nothing, as M. Dreyfus-Brisac, a most competent French observer, remarks,²⁰ more worthy of imitation.

We have already noted something of the influence these institutions have exerted. Perhaps the most tangible result of it is the multitude of monographs (*Programme*) that are annually published in Germany. These monographs touch every department of science and learning and present the most advanced results of knowledge therein. They are ordinarily written by teachers in the gymnasia, — by men whose skill in exact and progressive research was cultivated, whose special interest was aroused, and whose special studies were begun, in the seminary or private society at the university. The influence exerted by these institutions upon their members has been most beneficial. Men of great gifts, who would be great without any special training, are, by the discipline of the seminary, protected from making the mistakes of errant genius. Men of mediocre powers are trained in such a way that they make the most of themselves that is possible.

No one will deny that these organizations have their bad side. There is great danger that immature students will run into narrowing specialties before a broad and general mental culture and discipline have been attained. Sometimes a precocious ambition to make brilliant discoveries will lead the young investigator to part with good judgment. But it must be strenuously urged, both these classes of faults have their cure in the proper working of the seminary. Under a wise director, immature students will not be admitted to membership, and a familiarity with the broad principles and general relations that determine the existence of special subjects will be insisted upon even more strongly than minute special knowledge. And for faulty logic or mistakes in judgment there can be no more vigilant or effective critics than one's own fellow-seminarists.

I have dwelt thus at length upon this feature of German university life, chiefly, of course, because of the relation it sustains to our present discussion, but also, incidentally, I will confess, because we are apt, in ignorance of this factor, to undervalue the whole German university system.

The thought that will now rise uppermost in your minds is doubtless the query as to the bearing of these foreign institutions upon our American system of higher instruction. The question will be asked in silence, Is it worth while to bring into our higher education these foreign methods of training? Is there not something in the very structure and object of American college education that would make such methods out of place with us? It certainly would be an ill-judged proceeding to introduce into a college course, where mental discipline and the acquisition of general literary and scientific culture are the ends in view, methods of instruction which consist, essentially, in special studies. We are ready frankly to admit, it will be said, that in our post-graduate courses of study, in the professional departments of our universities, seminaries on the German plan would be desirable and valuable. It is these post-graduate institutions that are the counterpart of the German university; the American college is not. The college is rather the counterpart of the German gymnasium; and, at the gymnasia, seminaries do not exist, nor is original work performed. Let us, then, remain content with the organic completeness of our national system; a wonderful work has already been done; let us leave experimenting alone.

These objections are plausible, in part they are just, and they demand more than casual notice.

Our American college is a peculiar complex. It can be exactly likened to nothing else in any foreign land,—neither to the German university nor to the gymnasium. If we take the subjects taught in an American college, we shall find that the attempt is made to cover a much more extensive ground (though less intensively) than is done in the German gymnasium. The studies prescribed for the degree of Bachelor of Arts in the average American college are substantially equal in range to those pursued for the last two years at the gymnasium (except that, in the latter, classical studies receive relatively more attention), together with a portion of the leading non-technical subjects treated in the philosophical faculty of the German university,—language, literature, philosophy, and science. And, as Schleiermacher has said,²¹ the essential character of the German university (which has liberal education as the higher, and professional education as the subordinate end in view) is to be found in the philosophical faculty. Thus, as regards the subject-matter of his studies, the American college graduate is at graduation supposed to be as far advanced in intellectual growth and attainments as a German student, who having finished his gymnasial studies, has spent two years in liberal studies at the university; and an American

student, at the end of his Sophomore year, stands at about the same point in academic progress as the *Abiturient* or German gymnasial graduate. In the matter of age a further coincidence should be noted. The average Junior in our colleges is nineteen or twenty years old, which is if anything a trifle above the age of the German youth at the beginning of his university life.

If, on the other hand, we consider the methods of instruction used at home and in Germany, we shall find that, as things have long been with us, there is an almost exact resemblance between the college and the gymnasium, and almost none between the college and the university. The object of the gymnasium is in the main, as expressed by Von Sybel,²² a most trustworthy authority, to train the intellect and to introduce the student to the study of authors of antiquity and of his own mother tongue. In all this work the learner places himself implicitly under the guidance of others; he exerts himself only to become master of what is set before him,—to perform assigned tasks, to acquire the knowledge and the information that are prescribed as most essential to a liberal culture. He is occupied solely, to use Lord Bacon's metaphor, with the work of taking his stand upon the antiquity of inherited knowledge, and he thinks but little of the progression that he ought duly to make. He is at school.

In the German university, however, a new method is followed. The young man now stands upon his own feet. The principle of authority which controlled his education up to this time is now abandoned. He is independent and alone; not a pupil of, but a fellow-worker with, his instructors. It is the very essence of the German university idea, that it sets before the student as the goal to be reached, perfect independence in his intellectual activity.²³ All the university methods and regulations have this end in view; the studies of the student are not prescribed, his time is not mapped out for him, he is not obliged to be regular in his attendance upon the university exercises. His period of pupilage is over; he has left school. He is a man whose further growth is through independent action.

We set before our American students the subject-matter in part of university instruction, but do not, as a rule, make use of university methods. We keep our young men at school until they graduate; and that they often go from college still children in intellectual power, while men in general information and in years, is our fault. And many times, if they do possess a crude power with sterling character, it is because, as Emerson says, their schoolmates have educated them; the college curriculum has not done it. When American college graduates and German students are brought into contrast

in an historical or philological seminary, the *kindlich* (as an eminent Berlin professor has expressed it), the puerile, character of the work of the Americans is always remarked upon. These young men often have a vast amount of information, which is not knowledge; they do not know what it means, nor how to use it; it has no organic unity or life. Young Americans, however, who have had laboratory training at home are always, in the seminaries for physical and natural science, fully on a par with the Germans in ability and skill.

The American college, as we have now seen, is a mixture of gymnasium and university. It already possesses many of the characteristic features of the gymnasium, — its quota of prescribed studies, its fixed and minute regulations as to conduct and attendance, its methods of instruction and study. But in the course of his college life our American student passes from the gymnasial stage and subjects of study into the broader field. His powers have been greatly matured and disciplined; in years he is a man; he has already obtained the great essentials of information. Let him now, in this broader field, be left more to himself; let him have the opportunity to subject himself to something of the same independent self-training that is prosecuted by his fellow in Germany.

A few of our colleges have already made a step in this direction. In the provision for elective courses of study, they have aimed to imitate, in a certain degree, the broad scope and freedom of choice of the German university; and such studies they have very wisely always placed toward the latter part of the college course, — in Junior and Senior years. And in a few of our institutions, as will be seen later, the seminary has been actually introduced.

There would seem to be, then, neither in the principles nor in the practice of our American colleges an insurmountable obstacle in the way of introducing what is so characteristic of the German university system, namely, education by means of original research.

The discussion, however, must be brought nearer home and its subject should be presented without regard to foreign models. That it may have practical value, suggestions should be offered as to methods of original research by college students, — helps, incentives, conditions, and limitations. Let us bring out explicitly what thus far has been only implicit, even if we are obliged to repeat.

There are, it should be remembered, three prominent objects equally in view in every well-considered system of higher education; namely, the training of the mind to self-knowledge and self-mastery, the acquisition of the mass of information which, duly assimilated, makes up culture, and the power of independent and skilled intel-

lectual activity in new fields of knowledge. Neither object can be lost sight of, for the sake of the others, without greatest detriment to the rounded character of the liberal education. In our American colleges the student attains the second of these objects and to a certain extent the first. The very effort to learn what is taught, to receive what is given, gives one increasing facility in apprehension and understanding. The latter of these three objects, however,—the power of independent and progressive intellectual activity in unfamiliar fields of knowledge,—is very inadequately attained in our colleges. This power comes only through actual practice and experiment, and best under the guidance of skilful masters in the art; and this actual practice and experiment, this careful investigation in new fields, this independent personal research, are what we do not have in our colleges. It is for this that I am speaking to-day. It is true that there is much work on the part of college students which might be called original. The essays and orations that are written in sufficient abundance frequently presuppose and require independent research and independent criticism. Unfortunately, however, too often the literary work of the college student is a patchwork made up of the thoughts of other men; sometimes unconsciously put together, upon subjects where, in many cases, the student is himself fully competent, if he will but make the endeavor, to arrive at an independent opinion. The thoughts of other men, leading spirits, are appropriated but not assimilated. Had the student gone through something of the same processes in the formation of his opinion as the men had done whom he echoes, his opinion would have been his own. The fault is partly in the student, but most in the college. Frequently the subjects that are assigned for treatment are so broad and so philosophical that it is impossible for a college boy, with his ignorance and inexperience, to form upon them a thoroughly digested and well-reasoned opinion: he is compelled, if he say anything, to echo the voices of others. Again, we often make more of the rhetorical elegance and finish of the composition than of the quality of the thinking it embodies. These things ought not to be. We ought to give our young men tasks that they can perform unaided. The themes assigned should not be so extensive in scope that the materials for their discussion cannot be duly gathered by the young men themselves. A limited subject, thoroughly mastered, is far more useful than vague yearnings after the infinite.

Original research should be postponed to a late period in the college course; it should be begun hardly before Junior and Senior years. The broad foundations of a liberal education should have been

securely laid before special work may be entered upon. To act otherwise would be to disregard the balance and proportion that characterize all true education. Nor in any special subject should original work be begun before the broad features and the general relations of that subject shall have been thoroughly mastered.

A student must have his bearings in a subject before he can expect, with success, to develop any small portion of it. A panoramic view of the whole field, not only of liberal culture, but also of that department of study in which he proposes to do special work, must be clearly before his vision before he can expect with profit to enter upon the land and possess even a small tract of it. General studies give this panoramic view, while special studies bring one face to face, hand to hand, with knowledge. The student who has made only general studies is as one whose knowledge of a foreign land is based alone upon the reading of books of travel, while the special student who has done original work is as one that has actually visited and seen the countries about which he professes knowledge.²⁴

In particular, the student should not undertake extended research in Greek or Latin philology, nor in fact in any of the languages, before he is in one sense master of the languages, — before he not only is able to read them fluently, but also has done a large amount of such reading. *Lesen, viel lesen, sehr viel lesen, möglichst viel lesen*, is Ritschl's advice to the young philologue. In other words, he must have become at home in these languages before he can be allowed to do what is, properly speaking, original work in them. In history or biography work should not be begun upon a special event or upon a special character until mastery has been gained of the general features of that event, the circumstances in the midst of which that person was placed.

It will be found, further, that special work entered upon after such preparation not only will intensify one's knowledge of the particular object investigated, but also will incidentally extend one's knowledge, and, in a most surprising manner, throw light upon hitherto dark portions of the wider field. In fact, in the broad relations of the studies of special topics, and in the widening of general knowledge by means of them, is to be found much of their educational value.

To illustrate this truth, as well as to give a distinct example of what might be spoken of as original research in a college course of study, let us take the subject of history, and, in particular, a topic from Greek history.

Our student, either in the preparatory school or in the prescribed course of college study, has become familiar with the outlines of the

history of Greece. He is thus prepared, in a measure, to undertake the investigation of a special topic; he chooses for his subject one of the great battles that mark epochs in history — that of Salamis, for example. In the first place, he will carefully gather from all possible quarters all the original records of the battle now accessible. Herodotus' account and the brilliant narrative of Æschylus (in the "Persians") will be his fundamental materials. Other ancient writers will yield him information as to many matters of interest and importance, as to the chief combatants, numbers of contestants, exact date of the battle, etc., — writers like Thucydides, Ctesias, the orator Lysurgus, the poet Simonides, Diodorus Siculus, Plutarch; their contributions to the history will be in scattered notices, to be found in their writings without great difficulty. The student will also familiarize himself with the external circumstances of the battle, particularly the topography of the scene of conflict. On the basis of these materials alone, duly sifted and mastered in detail, he will then himself write a new and original history of the battle. He will ignore, for the time, all that has been written upon the subject by modern historians. He will often make mistakes; but these will be corrected by experience and a wider reading. In the progress of his work much light will break in upon him; the connection between the various historical writers of Greece, their merits and their defects, will become apparent to him.

In writing history thus he has become a creator. His critical faculties also are called into play in his comparison and judgment of his sources. The result, then, of the treatment of such a simple theme as this will be not only vivid, exact, and thoroughly authentic information as to the battle of Salamis, but also a greater familiarity with many important writers of antiquity, a training of his critical faculty, and a step toward the important achievement of clear headed thinking for one's self. He is become an authority; he is no longer an echo.

If he should prefer a biographical theme, there are many of the famed worthies of antiquity about whose persons so few and meagre accounts are left in literature as to make very easy an original study of their personal history, — men like that first democratic statesman, Clisthenes of Athens, like Aristides, Epaminondas, and others.

Subjects chosen from ancient history have a great advantage over those taken from modern history, in the fact that the data to be used in the former case are comparatively limited in extent, the authorities are few in number, and all the possible material is easily accessible to the student. In modern history the converse of the above is true

in almost every particular ; the factors that enter into every problem are very numerous ; these again are outnumbered by the authorities, and, finally, the original records, the consultation of which is indispensable to a thorough treatment, are beyond the reach of all except the favored few. As an eminent historian once said in my hearing, only a man of genius, leisure, and fortune can study modern history as it should be done.

The student may desire to extend and deepen his knowledge of certain facts in connection with one of the languages to the study of which he is required to devote so much time. He may wish, for example, to know more about some of the features that distinguish Greek from the more cumbrous modern languages, and that have won for it, in the judgment of the competent, the pre-eminence among known languages for delicacy, beauty, vividness, and strength, both as the expression and as the instrument of thought. He can familiarize himself, for example, with the characteristic uses of moods and tenses, of particles, of prepositions, in no better way than by making careful and exhaustive lists of all uses in some greater or less portion of the authors he may be reading. These lists, if extensive enough, with their almost spontaneously suggested classifications, would yield him the knowledge he is in search of far more satisfactorily than most patient grubbing, without such work, in excellent treatises on moods and tenses, particles, and the like in any language. The lists would also serve to an extent as dictionaries or indexes to the vocabulary and usage of particular authors, and in many cases would be cordially welcomed by professional scholars as positive additions to our knowledge of Greek and Latin. One of the most popular of our small Greek dictionaries was made complete for that part of the Iliad which is read in our schools, by work of this kind done by a Harvard Freshman.

The field of research of most interest to the majority of students will probably be that of the English language and literature. As an illustration not of what might be, but of what actually is done in this and other lines, I shall take the liberty of reading from a letter on this subject written me by Professor F. A. March of Lafayette College :—

“ . . . A great deal of writing is done here by the undergraduates, which is intended to be the record of the writer's investigation and of his views to which the investigations have led. We distinguish this work carefully from rhetorical essays and orations, which we have in sufficient numbers, but which are prepared for different professors from those who receive the first kind of work, and are cor-

rected and graded differently. We insist much on this distinction; the papers are to have no oratorical flourish, but are to state facts or arguments in the simplest language. . . . We give out subjects involving statistical research, *e. g.*, the examination of the style of an author in respect to the proportion of Anglo-Saxon and Latin words which he uses, in respect to the percentage of adjectives and substantives, of adjective clauses and substantive clauses, and the like matters of etymology and syntax. A collection of all the instrumental cases in a given book in Anglo-Saxon, with classification and discussion, or all the subjectives, is another kind of investigation necessarily original.

"Biographical essays are also given out and discussed in such a way as to emphasize going to the sources, *e. g.*, Shakespeare's life at Stratford. In every statement that the writer and reader makes he is pursued by questions as to how he knows it, till we get to original documents, or want of them. So in an investigation of the spelling of Shakespeare's name.

"In discussions of history a similar course is taken, *e. g.*, every class has a great time over the career of Demosthenes, each man taking sides for or against him on the trial while reading *De Corona*. And they have several field days of discussion on the different issues, in which it is understood that Grote and Mitford and the moderns go for nothing, the original sources and the sound sense of the class and its champions are all. So also in weekly papers, in connection with the study of psychology, subjects are given out for independent criticism or research.

"In English, we close our college studies by a term's work on a single author (different each year), resulting in an extended written article in which topics of original research are included, minutes of facts and reasonings are handed in and openly discussed somewhat, on assigned topics, one day in each week, till three or four weeks before the end of the term; then all and more (*ad libitum*) is worked up into the grand article. We often have quite a little book made by some of the class; but I dislike length, and proclaim that quality not quantity counts. A statistical examination of the language and style, with an attempt to explain the causes of the peculiarities found in an author in those respects from grounds in his character, times, subjects, and so forth, is always part of the work. I sometimes give out a passage of Anglo-Saxon to be the text of a book (in miniature), the students to prepare notes, critical and explanatory, and make out an etymological vocabulary, historical introduction, and what-not, as if they were to print it as a book. As there are no good Anglo-

Saxon etymological dictionaries of any account, and no annotated editions of the authors, this is very good original work.

"It strikes me that perhaps the main thing peculiar about our work, as compared with the regular college staple, is the giving out particular, rather minute, topics, and requiring them to be treated in a definite way, instead of leaving the writers to indulge in vague generalities. A certain amount of this sort of work seems to me very desirable and easily attained. It strikes me it is better attained by an understanding that each professor, when hearing certain studies, will direct such work as part of the regular study, and auxiliary to the mastery of the regular text-book, than it would be in an independent programme of original researches arranged by the Faculty."

Further detailed description of original work that might be or is done by college students in literary, philological, and historical fields is unnecessary, certainly after the reading of this suggestive letter.²⁵ Work of this original character, consisting in and based upon original research, in the departments of mathematical, physical, chemical, and natural science, I shall not venture to suggest. Those interested in this most important phase of the subject will find it well treated by Professor H. E. Roscoe, in his "Original Research as a Means of Education" (Owens College Essays and Addresses. London: Macmillan, 1874). Professor Roscoe restricts his discussion almost exclusively to this second aspect of the subject, much as I have restricted mine to the former aspect.

How, it will next be asked, might original research be provided for by our colleges in their undergraduate courses of study and instruction?

1. It might, as Professor March suggests, be conducted entirely as an adjunct to the regular work of the text-book and recitation-room. In fact some parallel work carried on in this way is often found absolutely necessary for the complete mastery of certain subjects of study. It is done much in Germany at the gymnasia. I was present a few years ago at such an exercise in a Latin class at the Eton of Germany, the famous Schulpforta gymnasium. An event in the life of Cicero had been assigned for investigation. The members of the class hunted up all the passages in the various writings of Cicero touching upon the event, combined them, and drew their own inferences as to Cicero's conduct on the occasion and his views concerning it. This arrangement would, however, if exclusively followed, give all original research an informal character, and would seem to place it in constant subordination to the recitations. The relation of professor and student as teacher and pupil would not be lost sight

of and merged into that of fellow-workmen. This latter relation is of great importance, when a student is to work independently. Still these are not fatal objections, and there might be circumstances where this method of procedure would be better than any other. .

2. Seminaries, on the German plan, or societies corresponding to them, might be formed. Admission to the seminary should not be granted before at least the beginning of the Junior year. Membership should be entirely optional. The number of active members should be small. In case there are many candidates, choice should be made according to merit. Men who engage in this work might properly be allowed dispensation from a certain amount of other work. The efficiency of such an institution would depend largely upon circumstances, most of all upon the ability of the director.

In a few of our American universities there are now in existence such seminaries. They are usually designed for post-graduate students, but in most of them undergraduates also have the privilege of active membership. At Harvard, Professor F. D. Allen has what is practically a seminary in a course of study in classical philology, comprising "Practice in Text-Criticism and Interpretation of Greek and Latin Authors, Discussion of Theses on Philological Questions," where "the exercises are colloquial, and thrown as far as possible into the hands of the students themselves." Similar work is done at Yale under Professor Packard; at Johns Hopkins there are Greek, Latin, and mathematical seminaries. Professor C. K. Adams's historical seminary at Michigan University is well known; and there are in other colleges courses which virtually train in seminary methods.

The seminaries have the great value that springs from association in work. Interest and enthusiasm are contagious, and workmanship, constantly subjected to severe and vigilant criticism, becomes finished and mature. Better results, I believe, would be reached through these public organizations than alone by what might be called private original research.

3. Such private work, however, should not be neglected. It could be encouraged, in one way, by allowing men properly qualified to substitute, for a limited amount of the required rhetorical exercises, theses embodying the results of original research. This practice is, or has been, in vogue at Harvard, where candidates for final honors are allowed to present theses on the subject in which the honors are sought, in place of a certain number of the forensics which ordinarily are required of all.

4. The granting of honors in special subjects might be conditioned in part on the presentation of satisfactory theses. The post-

graduate degree of Ph. D. is in most of our universities conferred only on those who have done work of this character.

There is something like this in existence in Cambridge, England. Mr. Oscar Browning writes me that no provision is there made for original research on the part of undergraduates, the only exception being "in colleges such as Trinity and King's, where dissertations are allowed to help towards the attainment of a fellowship. These dissertations are of the nature that might be called original work."

5. Special prizes, such as are now offered ordinarily for purely literary essays, would certainly incite some men to work of the kind we are speaking of.

6. The sixth and last recommendation I hold to be the most important of all. The college might give a special or an ampler *facultas docendi* in any particular class of subjects to students that had shown ability and skill in original research therein, either in the seminary or by private work.

Our secondary education, our high schools and academies, and, to a certain extent, the tutorships in our colleges, are in the hands of recent graduates. It is, of course, out of the question at present to expect that candidates for these positions shall have gone through that long course of severe professional training that has been educationally the making of Germany and of German scholarship. But it would be an unspeakable advantage could we insist upon something of it in all the young men who expect to receive from their colleges recommendations to posts as teachers. Let us, if only for the sake of this class of college graduates, for the good of our higher educational institutions, make some provision for collegiate discipline in original research. The seminary would be the best normal institute for such men: there they learn themselves, their subject and how to work; thus they know how and what to teach.

Once set on foot, work of this character would take care of and perpetuate itself. It could not fail to arouse the enthusiasm of students; and young men need no spur from without to keep them at that in which they are interested, whether it be base-ball or books.

The value of original research as a means of education lies chiefly in its reflex effect upon the person prosecuting it. It educates more through the scientific methods, through the actual intellectual experiences it compels the student in his self-exertion to pass through, than through the new matter it brings to light. As Karl Vogt has said, a right method in investigation is often of far more value than the investigation itself.²⁶ It schools the mind to skill in the acquisition of knowledge; and ability to learn is more consequence than accumu-

lated learning. In fact it is the very best way of training the mental faculties. Kant held, as Mr. Browning reminds us in his wise little book on "Educational Theories," that "the powers of the mind are best cultivated when we do things for ourselves." "All teaching," says Herbart, as also quoted by Mr. Browning,— "all teaching, to be effective, must set the mind of the learner in independent motion. . . . The learner must add something of his own to the ideas presented by his instructor. Instruction may be either analytic or synthetic. We must make use of both these means. . . . The mere imparting of information will not unite itself with individual consciousness, . . . unless it be combined with the practice of analysis."

The effect upon the student will be ethical as well as intellectual. Young men become thoroughly interested in what they are doing for and by themselves; they then work with serious, earnest, business-like directness. Proper self-reliance, in the spirit of which alone all original research must be carried on, develops at once one's moral and one's intellectual character. The awakened activities of the whole mind, exercised with constantly increasing skill, are themselves a discipline. The student's thought receives unity, clearness, and accuracy. Intellectual independence is attained. Those habits of mind are acquired that not only exert the most marked educational influence upon their possessors, but also are found to be of the greatest practical value in active life. The mind learns to balance, weigh, and discriminate, and, as we are told by more than one eminent teacher; it is precisely this power of balance, weighing, and discriminating that is of most value in life. In the prosecution of original research, the student is performing, in a speculative and philosophical way, what he is subsequently called upon practically to do. "The highest success in life comes to those who weigh probabilities best" ²⁷ "If," as Professor Roscoe observes, ²⁸ "if freedom of enquiry, independence of thought, disinterested and steadfast labor, habits of exact and truthful observation and of clear perception, are things to be desired as tending to the higher development of mankind, then original research ought to be encouraged as one of the most valuable means of education."

The items of knowledge obtained by these means become the personal, inalienable property of him who has thus won them, whether it be knowledge that has long formed part of the world's store and is gained anew, or whether it be absolutely new truth; it becomes wisdom, — and wisdom lingers.

"Was du ererbt von deinen Vätern hast,
Erwirb es, um es zu besitzen!" ²⁹

The existence in our educational institutions of such a spirit of independent and earnest activity in original research would have its marked effect. Colleges of this character would cease to be mere schools, — sometimes they would become outposts on the ever-advancing line of human knowledge; teacher and pupil, united in a common interest and enthusiasm, would grow in zeal and in the skill and productiveness of their work. What Professor Seeley, of Cambridge, England, says of the presence of this spirit among the teachers of a university, is equally true of its presence in that larger body of students, made up of teachers and pupils taken together: "Where the spirit of original inquiry is most active among the teachers, there the teaching is best; and, on the other hand, where this spirit is languid or dormant, the teaching, however assiduous and conscientious, is degraded in character; and such a university tends to become a mere school." ³⁰

It is important for all the great interests involved that the colleges and universities of a country should ever be the burning centres of its intellectual activity. This they will cease to be, this they cannot become, unless at them are practised and taught the most advanced and perfect methods of research and inquiry which are known to the experience of mankind, in all the great departments of science and learning. This vital truth has been reiterated to the English universities,³¹ and only a few days ago was brought home to the Harvard mind by Mr. Alexander Agassiz, in his remarks to the alumni on scientific education.

There is a further and a still higher obligation of which I have not spoken; an obligation laid upon us by our very opportunities, the obligation resting upon every educated man to push forward, for the sake of others, as well as for his own, that narrow line which separates the known from the unknown. It rests upon the man of intellectual gifts with almost the same binding power as upon the man of moral force rests the obligation to make his fellow-men better and purer. This obligation cannot be discharged at all unless we avail ourselves of all the aids accessible, acquire all the skill possible for the great work, and provide for others that are to come after us the same advantages. For this high and noble calling is needed intellectual independence, the full possession of what is known and the power to increase it, the ability to act securely and effectively alone, to advance unaided and without risk of fatal failure into the darkness that is still to be illumined. And when can these best gifts be better won than in the quiet hours and scenes of college life, unstirred and unmarred as they are by the cares and preoccupations of

business or of profession, when hope is fresh and energy unabated, when the high vision of ideal aims is still bright and clear before the young and ambitious soul?

NOTES.

For assistance received in gathering the materials and documents for this address, my thanks are due, above all, to Professor Paulsen of the University at Berlin, to my sister Mrs. Lucy M. Mitchell in Heidelberg, and to the Harvard College Library; also to Mr. Oscar Browning of King's College, Cambridge, to Professor F. A. March of Lafayette College, to Professor T. D. Seymour and to Mr. George Bendelari, both of Yale College.

¹ J. S. Mill, Inaugural Address, Feb. 1, 1867 ("Dissertations and Discussions," Vol. IV. p. 333 ff.).

² "Möge das Studium der griechischen und römischen Literatur immerfort die Basis der höhern Bildung bleiben." Goethe, "Sprüche in Prosa," Ethisches, Abth. VI. (No. 510 in von Loeper's edition).

³ Bacon, "The Advancement of Learning," Book I. (v. 1. in Wright's edition).

⁴ The organization and history of the *seminarium philologicum* at Göttingen is fully described in R. Vormbaum, "Die Evangelischen Schulordnungen des achtzehnten Jahrhunderts" (Gütersloh, 1864), where extracts from the original documents are given.

⁵ Wolf's influence upon education in Germany is best defined by J. F. J. Arnoldt, "F. A. Wolf in seinem Verhältniss zum Schulwesen und Pädagogik" (Braunschweig, 1861). Wolf's draft of instructions for the director of a seminary is given in Arnoldt (Bd. I. p. 254), and the draft of his introductory address to the students on the opening of the seminary may be found in Freund, "Wie studirt man Philologie?" (Leipzig, 1872,) p. 148.

⁶ M. Edmond Dreyfus-Brisac, in his admirable "L'université de Bonn et l'enseignement supérieur en Allemagne" (Paris, 1879), gives a most interesting chapter (pp. 134-160) to the seminaries in the university at Bonn.

⁷ In Weise, "Verordnungen und Gesetze für die höhern Schulen in Preussen" (II. Abth., pp. 10-56), are given the legislation and ordinances in effect in 1875 in relation to the seminaries in the Prussian universities. Prior enactments, together with an immense amount of information as to the higher education of Prussia, are given by L. von Rönne, "Das Unterrichtswesen des preussischen Staates," Bd. II. (Berlin, 1855). Both of these works are official publications.

⁸ Weise, p. 19.

⁹ The revised statutes (dated Oct. 12, 1876) are not in print. Compare Dreyfus-Brisac, p. 150.

¹⁰ The statutes of the Juristic Seminary (dated Aug. 15, 1875), and the revised statutes of the Mathematical Seminary (dated Jan. 4, 1879), are not given in Weise.

¹¹ Weise, p. 10.

¹² Compare Otto Ribbeck, "Friedrich Wilhelm Ritschl. Ein Beitrag zur Geschichte der Philologie" (Leipzig, I. Bd. 1879, II. Bd. 1881), in particular II. pp. 30-41, 279-288.

¹³ Reprinted in Ritschl, "Opuscula," Vol. V. pp. 33-38.

¹⁴ Ritschl, "Opuscula," V. pp. 38, 39.

¹⁵ Compare with Ritschl's "Opuscula," V. p. 29, Niebuhr's saying: "Das Alterthum ist einer unermesslichen Ruinenstadt zu vergleichen, über die nicht einmal ein Grundriss vorhanden ist, in der sich jeder selbst zurechtfinden und sie begreifen lernen muss, das

Ganze aus den Theilen, die Theile aus sorgfältiger Vergleichung und Studium und aus ihrem Verhältniss zum Ganzen."

¹⁶ A favorite motto of Ritschl's was, "Nil tam difficilest quin quærendo investigari possiet."

¹⁷ See Ribbeck, *passim*; also Ritschl, "Opuscula," V. pp. 19-32, "Zur Methode des philologischen Studiums."

¹⁸ Ritschl, "Opuscula," V. p. 28.

¹⁹ Von Sybel, "Die deutschen Universitäten" (Bonn, 1874). "Fragen wir näher was sie [foreign critics] an unserm Fustand rühmen, welcher Moment ihnen als der Grund der Trefflichkeit unserer Universitäten erscheint, so lautet ihre einstimmige Antwort dahin: die stete Verbindung und Verschmelzung von Forschung und Unterricht" (p. 11). "Unsere Universitäten sind desshalb gute Schulen, weil sie nicht bloss Lehranstalten sondern auch Werkstätten der Wissenschaft sind" (p. 12). "Unsere Seminarien . . . in welcher also der Grundgedanke des deutschen Universitätswesens die ausdrücklichste Verkörperung gewinnt" (p. 28).

²⁰ Dreyfus-Brisac, p. 155.

²¹ Karl Schmidt, "Geschichte der Pädagogik" (Cöthen, 1867²), Bd. IV. p. 706, quotes Schleiermacher to the effect: "Dem Wesen nach sei die eigentliche Universität in der philosophischen Facultät erhalten, und die theologische, juristische und medicinische seien nur Specialschulen. . . . 'Zweck der Universität ist nicht das Lernen sondern das Erkennen.'"

²² Von Sybel, "Die Hauptsache aber, wie sich versteht, wird immer das Wissen und Können in den beiden alten Sprachen und in Folge dessen in der Muttersprache bleiben" (p. 52). "Wir erwarten . . . ein Doppeltes, Schulung des Geistes, . . . sodann die Einführung in die Lectüre der antiken Schriftsteller" (p. 54).

²³ Von Sybel, p. 38. "Das erste und letzte Wort unserer Lehrmethode ist Erziehung der Jugend zu voller Selbstständigkeit des Denkens."

²⁴ Ritschl, in Ribbeck, "F. W. R.," I. p. 334. Also, "Orientirtsein im Ganzen, und selbständig im Einzelnen, das ist die Summe aller methodologischen Rathschläge."

²⁵ Information as to original work done at Johns Hopkins by the students (mostly, however, post-graduate) is given in the *University Circulars* and is summarized in the *Annual Register*. Professor Gildersleeve's Greek seminary probably approaches the best German ideals more nearly than any other American institution of the kind, in the range, method, and quality of work done in and through it. The Latin seminary under Professor Warren well maintains the high standard set by its director and by the university. Professor Sylvester's mathematical seminary is without doubt unsurpassed in the world.

At Harvard there is much activity in this direction. Mr. George Bendelari, lately an instructor, writes: "In history certain of the courses are in original work. . . . The original work is of two kinds. *First*, The men select a subject for a thesis, and are then turned loose into the library among the original authorities, so that the results, although they may not be new, are certainly original so far as the work of the student is concerned. *Second*, The history of England, for example, is worked up without a text-book, the men using only the original authorities, under the guidance of the instructor. The best work, of course, is done by men who are candidates for honors; but there are plenty of others in the courses. In mathematics and physics work of this sort is likewise done; part of it consists in finding known results by new methods, part in obtaining absolutely new results. Some of the work in physics appears in the *Journal of Physics*, the results of original experiments by undergraduate students. In natural history the same is true; the results appear in the bulletins of the Agassiz Museum, and in those of the Boston Natural History Society. . . . I know that considerable work of this kind is done in classical philology. . . . In some of the German and French courses in modern languages theses are required. I am inclined to think, however, that they are mainly in the nature of literary criticisms, or of compilations. In Middle High German and Gothic original work was done, for instance, on the grammar of particular authors and works. In my old French course theses were required, and if they were mainly compilations, the fault lay chiefly with the scarcity of

material in the library. The effort was constantly made to obtain original individual work from the student. In all these cases, so far as the undergraduates are concerned, I doubt whether the results are ever very startling. As a means of preparing men for work after they leave college, however, and of teaching them to think for themselves, not to trust blindly to books, and not to be too much frightened, I consider it the very best work done in the college."

With regard to Yale College, Professor T. D. Seymour writes: "Professors Packard and Peck assign special investigations to their graduate students, but do not find the undergraduates so ready as they would desire for such work. . . . Occasionally a student is ready to undertake an independent investigation. He is always (supposing his fitness for the work) encouraged and aided. In other departments the optional work of the last two years is largely independent. In metaphysics, for example, each student looks up the system of some philosopher, which he is to study and criticise in all its relations. His thesis on this subject takes the place of an examination. . . . Mr. Packard tries the seminary work occasionally."

At Dartmouth, original research will hereafter be required of candidates for final honors in special subjects. Within three years past, in connection with one of the courses in Senior year, conducted by myself (in Linguistics), theses demanding original research have been written upon the following subjects: The Yankee Dialect, its peculiarities, in particular those of English origin; Word-Accent in English historically treated; Pronunciation of Classical Names historically and critically discussed; Comparison of the use of certain particles in the Greek of St. John and of St. Luke; the same of specified propositions; Comparison of the English of different versions of the New Testament; the English of Wyclif; of Sir John Mandeville; of John Gower; of Nicholas Udall; of Bacon's Advancement of Learning; of Ascham's Scholemaster; Characteristics of Addisonian English; topics in Chaucer's Prosody; Law Terms; Bibliography of Comparative Politics, etc.

²⁶ Quoted by Friedrich Müller, "Grundriss der Sprachwissenschaft" (Bd. I. p. vi). Ritschl's paradox is worth citing: "Besser methodisch irren als unmethodisch d. h. zufällig das Wahre finden." — "Opuscula," V. p. 27.

²⁷ C. K. Adams, "Manual of Historical Literature" (New York, 1882), p. 15.

²⁸ "Essays and Addresses Owens College" (London, 1874), p. 57.

²⁹ Goethe, "Faust," I.

³⁰ "Essays on a Liberal Education," edited by the Rev. F. W. Farrar (London, 1868²).
III. "Liberal Education in Universities," p. 152.

³¹ Compare Roscoe, p. 41 ff.

MAN THE MACHINE, OR MAN THE INVENTOR; WHICH?

BY PROF. JNO. W. GLENN, MARTIN INSTITUTE, JEFFERSON, GA.

WHEN the world, through reverence or fear of the Church, ceased to question her dicta, science languished and religion wellnigh perished. Stagnation in thought brought on mental stupor, that bred a corruption and miasm which paralyzed intellect for eight centuries.

For almost as many centuries pupils of schools refrained from discussing the doings of their alma mater, the methods of education became stereotyped, and those who ought to have led hardly kept pace with human thought. More recently, however, alma mater is beset with a crowd of "self-appointed censors," who seem as ready to expose her deficiencies and shortcomings as her older sons were to do her reverence. Many a thoughtless writer seems now quite solicitous to win laurels for himself by telling how bad an education he has, and how he was misguided in school and sent into the world untrained for his life-work.

Many appear to think that the college is still dreaming in the garden of Plato, while the world is discarding poetry and speculation and seeking only the useful. It is evident that there is a strong call to leave the old methods.

But it is the part of wisdom to move slowly in matters so important. The old education did a grand work; it at least made men if not mechanics, thinkers if not machines. Let us take care that the "new education" does not make mechanics instead of men, and machines instead of inventors. Every earnest, thoughtful teacher will be glad that this discussion has arisen, because it will awaken a wider and profounder interest in the subject of education.

NON-PROGRESSIVE TEACHERS.

Some points well taken against the "old education" are founded on the lack of practical common-sense and the narrow life of the teacher. These were most ably presented by a gentleman who twelve months ago read to you a paper on that subject. He was formerly a teacher, and, like most who turn "state's evidence," he is a "swift witness."

I refer all teachers to his paper; it may do them good, for, while many of his declarations are too strong — *e. g.*, that about the rela-

tive position of teachers in society — and some of the remedies he proposes may be inconsistent with fully established principles, yet much truth is presented with a wisdom and a force rarely met. Your present reader especially appreciates all that was said about routine work, as the main object of this paper is to caution against all tendencies toward intellectual automatism in teacher or pupil.

NON-PRACTICAL WORK.

In constructing this and the following sections, about fifty clippings were selected miscellaneously from the papers and periodicals of the day, and pasted in a scrap-book, so as to get the drift of public opinion. It would surprise any one who had not made the investigation to see what evils of society are charged to the old system of education. Verily, the school is at least recognized as a *power* in the land. We gather from one article that the college does not manufacture practical statesmen, and hence the demagogue holds sway.

A prominent political paper informs us that the city streets are filled with young collegians, learned in Latin and Greek, but, having no trade, they are unable to make their way in life, and join the band of loafers and vagabonds.

Others complain that farming and mechanics, engineering and mining, and all the arts in the land, are not taught in our schools, or that all the boys are not taught all the professions. Even one governor enters a complaint against his alma mater because she did not train him to push the plane. The merchant can find no clerks among the graduates, and the female colleges are crowding society with young women too ignorant to cook, too frail to manufacture their own dresses, too silly to become useful workers, and only qualified to play the piano and read worthless literature.

The professions of law, medicine, etc., are crowded, they say; young ladies cannot all find wealthy husbands; society is filled with idlers; idle brains are the laboratories of crime; and hence our school system — notwithstanding statistics to the contrary — is charged with nearly all the offences against the laws of the land. *Per contra*, two old-fashioned democrats proclaim that the technical schools attached to our universities are devices of the rich to make poor boys "hewers of wood and drawers of water" forever; and they call on all to shun such institutions.

They say that the industrial schools are undemocratic, and furnish no curricula for a broad education which would fit the farmer's boy for any position in life. So much for the defects; now

FOR THE PROPOSED REMEDIES.

Old Socrates used to say, "Let the schools make *true men*, and then the *uses* will follow." The two good democrats referred to above seem to have something of the same idea, but, judging from the clippings before us, a vast majority of newspaper and magazine writers seem now inclined to follow the plan of Aristippus, one of Socrates' pupils, who lost his manhood and became a parasite, and who, as far as we know, first said that "boys should be taught while young what they are to do when they become men." This last seems to be the cry all along the line. All the evils of society will be remedied when youth is trained for the practical business of life. The difficulty does not seem to have occurred to the advocates of this plan that neither teachers, nor parents, nor even the boys, can decide in the school-days what profession will be chosen on the arena of life. Yes, one distinguished scientist, well known in England and America, grasped this difficulty, and he proposes to meet it by having the boys and girls taught, even in the *primary schools*, all the practical knowledge needed in the business, professions, and arts of life. This seems too absurd to have come from a man standing so high; but thus he is reported by one of his own admirers, who adds, with some enthusiasm, that the learned professor would not only have every primary school become a university of industrial arts, but of drawing and painting, and even higher art, and also sound logic and metaphysics.

Par parenthesis, let it be remarked as rather significant that a vast proportion of the advocates of the new education, or, rather, "Technical Education," as it is called, are either paragraphists who have not given the subject a great deal of thought; or scientists who have entered the new school of science, which teaches that man is only a highly developed piece of material mechanism. This supposes a man to be a machine so complicated as to perform well every kind of mental and physical work. It abandons the old and well-established theory that only concentration of powers can make pioneers in thought or inventors in art, and substitutes

BROAD EDUCATION.

While it may not be the liberal course, it is certainly legitimate, when a proposition is made, to take it in all its extension and comprehension as given by the originators. Thus regarded, the new education is certainly a broad one.

The family and society, church and state, have heretofore been considered as very important factors in completing the education of a human being.

Some of the grandest minds which have blessed and dazzled the world with their miraculous work had very little training in school, but were developed in the home circle or in the conflicts of society, state, or church. The school-room alone would never have made a Columbus or Washington, a Clay or a Garfield. Only such agencies as family and social life can teach the thousands of little common-sense arts which fit a child for a practical life; and only such influences as church and state can develop all the powers of manhood, and make the being whom we worship as great.

Yet it is proposed to transfer all this work to the school-room and eliminate those factors which have given such grand results in the past. This is, of course, impossible; the impossibility becomes more striking when the task of teaching all professions is super-added; but the proposition sinks to absurdity when it is remembered that, according to the last census, there are three hundred and thirty-eight professions in our country, and that the average school life of a child is only about four years.

Such education may be indeed broad; but it would be the thinnest of veneerings. The advocates of the industrial and technical schools do not, I suppose, contemplate seriously such work as this. Then a choice from the three hundred and thirty-eight professions must be made for each child when he enters school.

"Economy" is one of the rallying cries of the new movement; and the saving of all time and force is certainly a prime object to be attained in all teaching; but the plan here proposed would, generally, result in a total loss of all the labor devoted to special fitness for the chosen profession. Whoever glances through a biographical dictionary must be impressed with the fact that only a small proportion of the great men of the past found fame in the field where they were placed, or for which they were designed, by parents and teachers. In fact, the entire system of "practical education," as now advocated, seems very impracticable, and those who are urging it seem to have very indefinite ideas as to what they will accomplish; but they are evidently very much in earnest, and they are giving to public opinion an impulse which may carry it as far toward the extreme of utility, as the ancient philosophic plan was situated on the extreme of inutility.

TENDENCIES.

It is admitted by the most careful thinkers, who contended that, in any system of education, we must seek *first* the highest civilization and the loftiest development of the human mind, that we may

yet make some concessions to the demands for utility. It is admitted that industrial schools are needed to take the place of the old apprentice system of Europe. It is further granted, that there is a real demand for institutes where technical training may be had by those who have gone through the gymnasia, and are old enough, or sufficiently developed, to choose their own profession. But the whole tendency of the system now pressed on the public attention is to make very superficial scholars or merely skilled machines for special work. As stated, the special *purpose of this paper is to stress this tendency.*

If the new education proposes to teach, and to *teach well*, only the principles and rules of arts and industries, that might be conceded, as it is already embraced in the present system; but more is evidently contemplated.

The great demand seems to be for method and *practical* application of principles, or a direct training of the members and muscles of the human frame, or more specifically still, to make a skilled machine.

To attain perfection by this system of education, the whole process must be reversed; and thought, instead of being directed by the will, must be guided by instinct. That mechanic only can be considered perfectly skilled who has practised an operation until all the necessary movements become instinctive. *Will* makes mistakes and may spoil the work by a misdirected blow, while instinct is infallible, and muscle under its direction becomes as exact as a machine. The initial force of the former act originates in the brain, and travels along a great length of nerve with many chances of error; but in the latter act, while the general order may come from the brain, the executive force starts from ganglia located near the muscles to be put in motion.

Indeed, "practical education," to use a figure of government, is only provincial: though located in the empire of mind, its municipal law is essentially different from that of the general government.

Mind itself can only be strengthened, broadened, and elevated by *voluntary* action. When the act has been repeated a given number of times, the work of repetition and execution is then relegated to the instincts and sinks to the grade of mechanical; while the will, in command of higher powers, leads out to loftier feats and new conquests. When education becomes practical in this sense, all invention and all advance in science and discovery must cease. The higher powers of the mind will rarely be brought into action; imagination will fold its wings, and the forces of the will be expended in mere mandates, or in directing new applications.

The old system made a Newton ; the proposed education, carried to its limit, may manufacture a Blind Tom. Tom is a splendid music machine, but a mental idiot. Can any one doubt that constant repetition of a single act through life would degrade the man to a mere machine? It may not be so contemplated ; but the whole tendency of technical training is toward this instinctive, or at least intellectual, automatism. The boy who does nothing all his life but shoot marbles would make the best of "plumpers," but would never attain any mental stature. If he did nothing but paste labels on spools, he might acquire the skill and exactness of a machine ; but all the forces of what might have formed a noble being will be centred in his tongue and fingers, and the grand powers of the will must be degraded to the work of the instincts. The man who does naught but handle a gun may become the best shot in the world ; but he is then a machine, and no longer a man.

So he who spends his whole life in recording the thoughts of others may become a writing automaton unrivalled, but will never have any thoughts of his own worthy of record. The young lady, after long practice at the piano, may not even be conscious as to which hand makes a given note ; but execution alone will never elevate her to the side of a Beethoven or a Wagner. This may be said of all musicians ; also that it is very rare that the same individual reaches distinction in both execution and composition. When the type-setter first takes his position before his case, active attention directed by will is necessary in selecting the required letter ; but when his practical education is completed, the mere thought of the letter M will send his hand flying under the impulse of instinct to the division of the case where the M's are located ; and the more swiftly and exactly is it done in proportion as the man is changed to the machine.

It is well understood that the soldier and the marine may be drilled down until they are transformed into fighting automata, and they enter the battle no more in the spirit of patriots or even the strength of manhood. This is the kind of education that is proposed for the youth of great America, for the descendants of Jefferson and Franklin.

If the scheme should be perfected, then indeed our future will be committed to "degenerate sons of noble sires" ; and yet the issue is squarely made, demanding careful and prompt attention. Some modifications must be devised by those wise enough to direct, or we may be forced by the masses far beyond the limits of prudence. Multitudes are now clamorous for practical education in the primary schools, and we need not be surprised if they demand that the

throne of knowledge be abdicated in favor of skill. The drift of recent thought seems certainly to be in that direction. There is something so specious, so dazzling in the brilliant execution of art, that it is not surprising when boys would rather be skilful chirographers, than to be Popes or Shakespeares ; when girls would prefer the artistic execution of a Blind Tom to the grand compositions of Beethoven or Wagner. No wonder that parents would choose that their sons should direct the tools which form the miraculous cabinet wares, and the complicated machinery, than to wield the thought of a La Place or a Newton. No wonder that mothers admire the elaborate dresses of the day more than the Bodelein tapestry or the cartoons of Raphael ; and not strange that the man who handles the throttle of a modern engine should stand higher in public estimation than the poor inventor who made the engine possible.

Again, the world is now in a great hurry, seeking short and easy methods to success. Indeed, the advocates of this new education seem to be on a hunt for a "royal road to knowledge."

It is so much easier to educate a man down to automatism than to raise him to the lofty platform of philosophy and invention. It will be a sad day for humanity, but a glad day for the boys and girls, when we commence the process of making machines rather than thinkers.

Every teacher knows how difficult it is to compel his pupils to the mastery of principles and rules ; while the child will voluntarily repeat the formulæ of parsing as he would an old song, and "work sums," as he calls it, day after day.

Such a system of education would degrade the profession of a teacher to that of a master mechanic ; for he would no longer build immortal spirit and unmeasured mind, but waste his energies in making machines which any trained specialist might do as well. It is not at all strange that the grand old cynic, Diogones, who said "he made *men*," should entertain a profound contempt for Aristippus, the miserable parasite who first advocated this theory of industrial education for boys. When such a system prevails, men may perfect machinery, but they will never invent any.

The country will be filled with artisans, but no architects will be found. Art may reign supreme, but its subjects will be only human machines ; and in making the machine all humanity will be destroyed. Even in the army, where it is sought to make men automata, moved by the will of the commander, the soldier ceases to be so valuable when his individuality is lost. This was abundantly illustrated when the crowded legions of Austria went down, three to one, before

the intelligent manhood of France. Such an education, carried to its limit, would fill our country with one-sided, or rather one-ideaed men. They might execute, but they could never plan or invent. They would be contracted in their views, and could never make good citizens. Every thought or impulse of their natures would be limited to utility and self. Corruptions in politics, and combinations in business for individual aggrandizement, would hold sway everywhere. Every process for elevating and ennobling would be eliminated from the school-room. Love of the true and the beautiful would be ridiculed as sentiment or rejected as useless; and such a race could never reproduce a Milton or a Newton, a Macaulay or a Webster, a Franklin or a Morse, or an Edison inventor, or even a *first-class* machinist. If such men are to work out the grand, the lofty civilization of the future, let our name rest with those of the undeveloped past. We would rather sleep among *men*, than live with such machines. We take no part in such work. True education is something far above all this; its main object is not to make man a worker but a *thinker*, not a machine but a *man*, with all that the term embraces. We would not have him neglect his work, but we would have him think first; and we would have him filled with all the grand imaginings and all the holy aspirations which would lift him to a position just below the angels.

We may compromise with utility, so far as it proposes to us agencies not inferior to any now employed in this grand work of making a being who can invent and construct all the aids to human labor, and not simply apply the principles already discovered. *Please let it be borne in mind*, that it is not the purpose of this paper to charge that all the branches of industrial education, or all the methods of the new education will produce naught but human machines, yet the tendency is in that direction, and automatism is the limit.

We would not have the world return to the old Platonian philosophy, which divorced science from labor, and regarded knowledge as degraded when applied to the useful arts; but we would hesitate long before accepting the theory that human power is to be estimated *only* by the number of dollars and cents which it may produce. Measured even by such a standard, that education is not best which seeks skill alone. Not only the great writers, statesmen, and philosophers of the world, but even the great heroes, inventors, and discoverers were something far above drilled specialities; they were broad, profound thinkers, many of them *considered* worthless dreamers in society, and very few of them followed the line of action marked out for them in early youth. Man was made to be some-

thing *more*, something far higher, than the most skilled *animal* in the list of creatures. Something of the power of creating has been communicated to him, and when he learns to originate, he can certainly apply.

The main duty of the primary schools is to awaken a consciousness of this creating energy and to develop the *ability* to use it. Skill can be acquired in the family, and in the special operative school, if the power to think and the potency of the will have first been awakened. The human will is an emanation from divine energy, and places man far above all instinct and mechanism. It is singular that so little time and attention are given to its development. Vast expenditures of talent and money are made to cultivate the affections and the intellect, but what teacher seeks to develop this highest of all human forces? In fact, do not teacher and parent both seek, first of all, to *crush* the *child's will*? Only in recent years has it attracted the attention of the most advanced thinkers; and yet it has been well known that the wilful boys, if directed by reason, have ever been the leaders in society and state. The untrained and unemployed collegians, who stir so deeply the sympathies of the newspaper man, do not fail from the lack of skill, but because the mental energy or the will-force was not aroused in early youth. Most of the successes and failures in life, so far as they can be traced to the school-room, commence their growth, not in the methods of instruction, but from the vigorous or feeble stimuli given to the germs of character. Just here may be found the true cause why woman has been inferior to man in her originating powers, and why to this day her sex has produced so few great inventors, writers, and philosophers. Her will has been dominated by that of man, or partially paralyzed by the edicts of society. The victims of dyspepsia, the slaves of strong drink and other appetites and habits, would soon be disenthralled, if this power were strong enough to command prompt and perfect obedience. *Will, will*, not skill, is the potential force and energy of life; and intellect, not instinct, should be the pilot.

The germs of immortality are the most important part of man's being, and they should have the first and the strongest efforts in the work of culture. A child should be directed to look and to struggle upwards with conscious efforts, and not be permitted to sink downwards to a mere skilful repetition or application of another's thoughts.

That civilization is noblest which carries man farthest from instinct and his animal nature; that education is best which gives the broadest reach to the mental vision, and arouses most perfectly

the activities of intelligent will and links us most closely to the spiritual nature from which we emanated ; and that idea of a school is the grandest which places man in a course of training that shall be continued in the college of the future, where the Great Teacher will preside, where the universe will be the curriculum and eternity the term for completing the work.

Such training as this, and only such, can lead to HIGHER EDUCATION.

ADDRESSES

or

DEPARTMENT OF INDUSTRIAL EDUCATION.



*THE NATIONAL INDUSTRIAL COLLEGE: ITS HISTORY,
WORK, AND ETHICS.*

BY EMERSON E. WHITE, LL. D., PRESIDENT OF PURDUE UNIVERSITY.

IN 1851 the Queen of England issued a gracious invitation to the nations of the world to send to her proud capital the best product of human industry. The nations responded heartily, and the World's Fair at London was the greatest and richest collection of the works of human art and skill on which the sun had ever shone. The jurors appointed to examine and compare the articles awarded Great Britain the palm of excellence in nearly all of the ninety grand departments into which the exhibition was divided. This verdict lit up her manufacturing cities with bonfires, and England rejoiced in the belief that she was mistress of the industrial world.

But the great exhibition had revealed, in a most impressive manner, the fruitful relation of science to human industry, disclosing the fact that the world had entered on a new era of industrial progress, — an era of scientific discovery and invention, in which the forces of nature were taking the place of human muscle. In the light of these disclosures, the nations of Europe saw that the sceptre of industrial supremacy could only be won by thorough scientific and technical training, and schools of science and industry were multiplied on the Continent, and those already existing were strengthened. The aid of science was invoked to give new power and skill to the agriculturist and the artisan, and scientific thought entered the field and the shop to improve and direct their processes.

Only sixteen years of the new industrial training in Europe had passed when Napoleon III., in imitation of Queen Victoria's example, invited the nations to send up to his imperial capital the richest products of human skill, and the world responded even more grandly than before. The Paris Exposition was divided, like its predecessor, into over ninety departments, and when the jurors reached their verdict, it was found that Great Britain had excelled her competitors in but ten of all the departments. She had been defeated by Germany, France, Belgium, Switzerland, and even by the United States, in important departments of her leading industries. This defeat produced greater consternation in England than the threatened invasion by Napoleon in 1860, and Parliament appointed a commission to make a thorough inquiry into the cause. The report made to Parliament in 1868 contains the testimony and the conclusion. England had been defeated by the superior education of the workmen in the coun-

tries that were her competitors. The report was soon followed by the passage of the famous Education Bill, by which Great Britain appealed to the schoolmaster to win back her pre-eminence in industry. Technical schools were multiplied throughout the kingdom, and science was given a larger place in the higher schools and in the universities. No nation has since made greater progress in industrial training than Great Britain; and the value of such training has been attested in each of the world's comparisons of national skill since made.

But the great awakening as to the importance of scientific and technical training, which preceded and found such grand expression in the Paris Exposition, was not wholly confined to the Continent of Europe. The movement was felt in the United States, and many thoughtful Americans began to realize that our agricultural and mechanical interests needed the same assistance which had been so earnestly invoked across the sea. While the producing nations of Europe were dotted over with technical and other industrial schools, many of a high grade, the whole number of such institutions in this country could be counted on the fingers of two hands; and few of these were adequately equipped for their work.

In the midst of this awakening in Europe, and only five years before the Paris Exposition, the industrial needs of the United States demanded the attention of Congress. The country was in the midst of a terrible civil war, and it was not a favorable time to inaugurate a great movement for the promotion of the arts of peace; but that memorable Thirty-seventh Congress rose to a full comprehension of its duty, and, by an act approved July 2, 1862, donated public lands to endow colleges "for the benefit of agriculture and the mechanic arts." By this act and its subsequent amendments, over eleven millions of acres of the public domain were set apart and consecrated to industrial education.

The purpose of this munificent donation is clearly expressed, not only in the title of the act ("for the benefit of agriculture and the mechanic arts"), but in the fourth section, which concludes as follows:—

"The interest of which shall be inviolably appropriated by each State, which may take and claim the benefit of this act, to the endowment, support, and maintenance of at least one college *where the leading object shall be*, without excluding other scientific and classical studies and including military tactics, *to teach such branches of learning as are related to agriculture and the mechanic arts* in such manner as the legislatures of the States may respectively prescribe, *in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life.*"

It is plain from these provisions that no State accepting this grant has any right to use the fund derived therefrom to endow and support a college or university of the ordinary classical type. The imperative conditions are that the fund shall be used "for the benefit of agriculture and the mechanic arts," by the support of a college, "where the LEADING OBJECT shall be to teach such branches of learning as are related to agriculture and the mechanic arts." The act, it is true, does not exclude other scientific and classical studies,* and so many of them may be taught as are deemed necessary to afford the "industrial classes" a liberal and practical education. From the introduction of the bill into Congress to the close of the debate on its final passage, not a word was said showing that it was the design of Congress to make a donation for the benefit of existing classical colleges, or for the purpose of founding new institutions of this class. The one central purpose of the grant was to found colleges of science and industry, to meet the industrial needs of the country. All the professions had their schools for special training, and business colleges had been established in all the centres of trade. The new industrial college was designed to afford scientific and technical training for the farmer and the artisan, and to promote the industrial interests of the country by scientific experiment and discovery.

The manner in which these great purposes should be accomplished was left by Congress to the legislatures of the several States; and these have usually determined the general plan of organization, but have wisely intrusted all details to boards of trustees, appointed to give shape and direction to the institutions thus founded. The fact that the plan of the organization was left to the States gave rise to more or less conflict of opinion and effort. In many of the States the classical colleges made an earnest effort to secure a division of the fund between them, and in several instances the grant was used to strengthen an existing State university or other classical institution.

The plans adopted for carrying out the great purpose of the grant may be classified as follows:—

1. The organizing or endowing of scientific or industrial departments in existing classical institutions, as in Connecticut, Rhode Island, New Jersey, Vermont, North Carolina, Wisconsin, Minnesota, Missouri, California, and several other States.

- 2 The organizing of new universities, as in New York, Ohio, and Illinois.

* The claim that the act imposes the obligation to teach *all* scientific and classical studies is a forced and unwarranted construction of this provision of the act.

3. The endowing of existing agricultural colleges, as in Michigan, Pennsylvania, Maryland, and Iowa.

4. The organization of new colleges of agriculture and the mechanic arts, as in Maine, New Hampshire, Virginia, Kentucky (detached from State University in 1878), Kansas, and several other States. In Massachusetts the fund was divided, two thirds being appropriated to found a new agricultural college at Amherst, and one third being appropriated to the Institute of Technology at Boston.

5. The organization of a new college of science and industry, with scientific, agricultural, and mechanical courses of study, as in Indiana.

The adoption of these several plans of organization has been more due to circumstances than to any intrinsic merit of the plans themselves. In Connecticut, New Jersey, and several other States there already existed in existing colleges fairly equipped scientific schools or departments, more or less distinct in organization, and the congressional grant was used to strengthen these departments; but, to prevent the funds from being diverted to classical or literary studies, they were in most instances separately invested and exclusively devoted to scientific and industrial purposes. The fact that separate agricultural colleges already existed in Michigan, Pennsylvania, Maryland, and Iowa caused the funds in these States to be appropriated to these institutions and used almost exclusively for agricultural purposes. In New York, the large national fund was supplemented by the munificent gift of Ezra Cornell, and the new institution assumed university proportions. The existence of the Indiana State University at Bloomington permitted Purdue University, though bearing a university name, to confine itself to the important work outlined by Congress; and it is believed that no other land-grant college conforms more literally and fully to the terms of the congressional grant. It is at once a college of science and a school of technology, science being made the basis of its technical training. Its central aim is to prepare men to lead in the application of science to agriculture and the mechanic arts; to send forth well-trained scientists, agriculturists, and mechanics to promote the great industrial interests of the State.

We cannot stop to discuss the comparative merits of these several dispositions of the national grant, and we have no desire to make invidious comparisons of the institutions that have received the funds. Some of the institutions have excelled as schools of science, and others have given almost exclusive attention to agricultural education, general and special. Few have given due attention to

technical training in the mechanic arts; but this defect is being corrected.

It seems proper on this occasion to inquire to what extent these national industrial colleges have realized the great purpose for which they were founded. It is now twenty years since Congress set apart a large portion of the public domain to found colleges "for the benefit of agriculture and the mechanic arts," and time enough has since elapsed to justify the popular demand for practical results.

The sources of information are certainly adequate for safe conclusions. The annual reports, the publication of which is required by the congressional act, contain much valuable information. Investigations have also been made by congressional committees appointed for the purpose, and the results embodied in reports to Congress. Several of the reports of the United States Department of Agriculture devote considerable attention to the agricultural work of these institutions, including instruction, experiment, model farming, etc. But, next to the annual reports and catalogues of the institutions, the most satisfactory and trustworthy sources of information are the several reports of the Bureau of Education, from 1868 (the first issued) to the present year. Each of these reports contains the statistics of the land-grant institutions, with statements of the improvements made, courses of instruction, and other information more or less complete. The report of 1871 contains a special report prepared by Prof. D. C. Gilman, then of the Sheffield Scientific School, Yale College, now president of Johns Hopkins University, Baltimore, who had been specially commissioned by Commissioner Eaton to investigate and report upon the conditions of the various institutions endowed by the congressional grant. This report covered only the first nine years of their history, and was necessarily largely devoted to the financial results of the grant, to State legislation, the organization and equipment of the institutions then established, the character of the instruction proposed, etc. It was too early to give results, but the interval which has since elapsed has been sufficient to change what was then only promise into actual performance, and it is hoped that the National Bureau may renew this investigation and carry it forward to the present time.

In anticipation of such an inquiry, it may be safely said that the results actually accomplished by the national grant in the two decades now closing are not satisfactory, though promising more complete success in the future. The best results thus far attained have been in the direction of scientific training and investigation. The founding of the national school has caused the study of science to assume

new importance in all higher institutions, and a greatly increased number of students are taking the so-called scientific courses of study. Radical changes have also been made in the methods of teaching science, and enlarged facilities for scientific study and investigation have been provided.

The most unsatisfactory results are in technical training, both in agriculture and the mechanic arts. The contributions made to agricultural science have been small, and the promising work of agricultural experiment is still in its infancy, even in the institutions first organized, and in most of them it has not been seriously undertaken. Comparatively few students have taken distinctively technical or industrial courses, and the small number of well-trained technologists sent into the industries of the country is at once a surprise and a disappointment. The great majority of the students receiving either an agricultural or mechanical training are found in the few institutions which have only industrial courses of study.

It is not difficult to account for this unsatisfactory progress in industrial training and investigation. The importance of technical education for the farmer and artisan is not generally realized, and, as a consequence, the demand for such training is limited, though happily increasing. There have also been a low appreciation and an imperfect knowledge of industrial methods; and this has not only been true of patrons and students, but also, in many cases, of officers and instructors. As a matter of necessity, the new industrial schools have been largely officered with men who were educated in the classical colleges, and hence had little knowledge of technical training and perhaps less faith in its value. As a natural consequence, in too many of these institutions, the main work has been in the traditional grooves, and their industrial effort has been superficial and inefficient, if not shammy.

The difficulty in securing instructors trained in applied science and technical methods has been one of the most serious obstacles which these colleges have encountered. The number of men in the country qualified by education and experience to fill an agricultural chair is not now sufficient to supply one half of the industrial colleges now organized; and ten years ago the supply of such men was still more limited. The older technical schools were obliged to train their own instructors, and this fact greatly retarded their progress.

The above facts show why the controlling, dominant influence in so many of the land-grant colleges has been classical, not industrial, and why the central strong current of opinion, desire, and effort has so often been away from the industries and toward professional life.

Even when the leading idea of the national college has been industrial, its development has been impeded and its progress choked by customs, practices, and other hindrances copied from the classical system, many of these being poor imitations of the stale mummeries of the old aristocratic universities of Oxford and Cambridge.*

This leads me to consider what should be

THE ETHICS OF THE NATIONAL INDUSTRIAL COLLEGE.

1. The imperative need of an industrial college is a central, vigorous, all-controlling *industrial life and spirit*. Back of every distinctive institution is an organizing thought or purpose; and this must have free, natural, and full development and manifestation. The true growth of such an institution is from within.

Every living organism has a life principle, which determines its growth, structure, and habits. The stem, branches, leaf, flower, and fruit of the plant are all the outgrowth of its inner life; and this is but the energy of the thought that created it. The elm does not borrow the foliage of the pine, nor does the oak cover itself with the leaves of the palm. The useful corn never discredits its kind by decking itself with the æsthetic disk of the sunflower!

The same is true of all human institutions. Back of their outer development are organizing ideas, which control all their life processes and manifest themselves in laws, customs, and manners. A democracy and a monarchy have each their true outer manifestation as well as inner life, and, when the former adopts the usages and institutions of the latter, it commits suicide. One of the growing weaknesses of the American Republic is the silly aping of European social customs and distinctions by the would-be aristocratic class of our people. The simplicity of American life is but the natural outgrowth of the great principles of equality which are embodied in our civil institution.

The growth of educational institutions is governed by the same law. If a school has a distinctive organizing thought back of it, it should have a corresponding distinctive life. Its central purpose must manifest itself not only in its equipments and courses of study, but in its ethics and spirit. All must be developed from *within*. A technical school cannot adopt the aims and customs of a classical college and long retain its distinctive character. Such an institution represents a new departure in education, has new aims and new

* No statement in this address is intended to disparage either the classical colleges or classical education. The speaker believes in both.

methods, and all its agencies and usages must be the outcome of, and in harmony with, its central purpose or idea. All its doors open into the industries ; and it is next to suicide for such an institution to smother its industrial life with the traditional usages of the classical college, whose doors all open toward the professions. Nor can an industrial school attain its highest success in training scientific farmers and artisans when made a mere department of an overshadowing classical college. It would be about as reasonable to expect perfect fruit from orange-trees planted in a grove of towering pines.

2. The industrial college must inculcate and secure *habits of economy*. The expenses incurred in taking a college course, especially in the older colleges, has more than doubled within the past twenty-five years, and the greater part of this increase is not due to increased cost of board or tuition, but to extra expenses voluntarily incurred by students. College societies, class observances, social amusements, etc., often impose expenditures that exceed all college expenses thirty years ago, and this increasing extravagance is bearing heavily upon parents of limited means who are striving to give their children the advantages of a liberal education. Hundreds of such parents are denying themselves common comforts to meet expenses needlessly incurred by their sons in college, and scores of young men are leaving our colleges burdened with debt incurred because they had not pluck enough to resist the unnecessary demands made upon them. The increasing extravagance of college life is one of the most serious obstacles which now impede the progress of higher education. It is shutting college doors against many worthy young people whose limited means forbid their attempting to meet such expenses.

But whatever may be true in other institutions, such extravagance in an industrial college is subversive of its chief purpose. Success on the farm or in the shop requires simple habits and wise economy in living ; and the young farmer or artisan who has not learned this lesson has not completed his preparatory training. A thorough education unfits no one for industrial pursuits, but the acquiring of extravagant tastes and habits may render such an education of little practical value. The spending of money needlessly during four years of college life is certainly a poor preparation for the life of self-denial and thoughtful saving which awaits nine tenths of our industrial students.

3. The code of ethics of the industrial college *must honor integrity and unswerving honesty*, the basis of all industrial prosperity. The student's word must be as good as his bond, and his promise must

be as sacred as his honor. No clique, faction, or party can make falsehood honorable or perjury a virtue ; and all such ruinous notions must be exorcised from the life of the industrial school. Its high purpose is neither to train politician, nor to school their subservient followers to think more of place and spoils than of personal honor. Industrial pursuits demand the highest qualities of manhood.

Permit me to add, in conclusion, that the industrial needs of the country are calling loudly for men of science and technical skill ; and the duty of training such men has been committed to the National Industrial College. Its mission is definite, its possibilities great. The officers and instructors to whom this great work has been committed must have faith in it ; they must be imbued with its spirit, and, above all, they must have the courage and the pluck to work out the problem of higher industrial training as those who must give account to coming generations.

THE FUNCTION OF AN AMERICAN MANUAL TRAINING SCHOOL.

BY PROF. C. M. WOODWARD.

WITH his gentle lance Emerson pricked many a bubble, and, though collapse did not always follow immediately, the wound was always fatal. In 1844, in his essay on New England Reformers, he charged popular education with a want of truth and nature. He complained that an education to *things* was not given. Said he, "We are students of words; we are shut up in schools and colleges and recitation-rooms for ten or fifteen years, and come out at last with a bag of wind, a memory of words, and do not know a thing. We cannot use our hands, or our legs, or our eyes, or our arms." And again, speaking of the exclusive devotion of the schools to Latin, Greek, and mathematics, "which by a wonderful drowsiness of usage" "had been stereotyped education, as the manner of men is," he says, "In a hundred high schools and colleges this warfare against common-sense still goes on. . . . Is it not absurd that the whole liberal talent of this country should be directed in its best years on studies that lead to nothing?"

This is, perhaps, too severe; but we must admit that Emerson anticipated and greatly aided a reform which has been gathering strength for a whole generation. Hence it is to-day scarcely necessary that I should present arguments in favor of manual education. The great tidal wave of conviction is sweeping over our whole land, and the attitude and aspect of men are greatly changed from what they were even ten years ago. What I said in 1873 in a public address in favor of technical education was held to be rank heresy: I fear it would be regarded as rather commonplace to-day. The progressive spirit of the age has actually penetrated our thick hides, and we are trying to keep step with the universe.

To be sure, we still call ourselves reformers, and we shall continue to battle for the new and the true till our banners are the only ones flying. But the day of surrender is near at hand. One by one the outposts have fallen into our hands, and only a few citadels remain. An armistice has been asked for, and, if we can only arrange satisfactorily the terms of an honorable capitulation, the enemy is willing to march out and join our ranks.

In every community the demands of technical education have been discussed, and in every instance when the old system has been

subjected to the tests which good sense applies to business, it has been found wanting.

And yet let me not pass with only words of criticism. Let us recognize the inestimable value of American public education. With all its faults, it is our best inheritance. Let us be just, yea, generous, if need be, to the bridge that has brought us over. Let us say, "God speed your work!" to those who are battling for education in States black with illiteracy, and let us commend the splendid work done by earnest men and women on all sides. But the faults — we must not be blind to them. If the old education has been good, we can make the new better.

DEFECTIVE EDUCATION.

Is then, I ask, — is the education we give as broad and round and full as it ought to be? Is the time of tutelage most wisely spent? Do the results we secure justify the means and methods we use? Is the relation between education and morality as close as it should be? In short, do we give the education which fulfils the definition of Pestalozzi, quoted yesterday by Dr. Jeffers? I think to these questions we must seriously answer, no. There is a lack of harmony between the school-house and the busy world that surrounds it. Some have even claimed that we are wrong in supposing that education always diminishes crime. Let us see if there is any truth in their position.

You know how often a life is a failure from defective or faulty education. Too often do we see young people, who might have been educated to eminent usefulness, cast, "unfinished,"

"Into this breathing world scarce half made up."

I have seen poor lawyers who, under a proper system of training, would have made excellent mechanics, and not a few highly educated, able-bodied men actually begging for the price of a day's board. I recall one man in particular, who was able to speak several languages, but, because no one would employ him as a linguist, he must needs beg, for he knew not how to work. Now when a man's education has been misdirected, and he is thrown upon the world shackled by out-grown theories, bewildered by false lights, and altogether unprepared for the work which perhaps he was born to do, and when in his extremity he resorts to knavery and violence and fraud to secure what he knows not how to get by fair means, those who directed, or should have directed, his education cannot be held blameless.

The moral influence of occupation is very great. A sphere of labor, congenial and absorbing, that fully *occupies* one's thoughts and ener-

gies is a strong safeguard of morality. If you would keep men out of mischief, keep them busy with agreeable work or harmless play. The balance of employments is fixed by our state of society and the grade of our civilization. Now, if indiscriminately we educate all our youth away from certain occupations and into certain others, as is very clearly the case at present, some employments will be crowded, and, consequently, degraded ; in others, the choicest positions will be filled by foreigners, and the lowest posts, wherein labor is without dignity, must perforce be filled by those who have neither taste nor fitness for their work. The result is broils, plots, and social disorder.

Thirty years ago an eloquent Frenchman (Frédéric Bastiat) charged the one-sided education of his countrymen with being an actual danger to society. He argued that the "stranded graduates," as he called those who, unable to navigate the rough waters of practical life, had been tossed high and dry on the reefs along the shore, "filled with a sense that the country which had encouraged them to devote their best years to classic studies owed them a living or a means of living, would become the leaders of mobs and officers at the barricades."

MORE LIGHT.

When the shadow of death was drawing over the great Goethe, he uttered his last wish for "more light." We must echo his cry, if we would prepare our American system of education for a more glorious destiny. We treat our children too much as the unskilled gardener treats his plants. He puts them by a window and pours over them a flood of light and life-giving rays. Instinctively they turn out towards the source of their strength. They put forth their leaves and budding promises, and, as we look at them from the outside, we mark their flourishing aspect and rejoice. But, if we look at the other side, we shall find them neglected, deficient, and deformed. What they want is more light, — light on the other side. Were the sun always in the east, our trees would all grow like those on the edge of the forest, one-sided.

So in education, we must open new windows, or, rather, we must level with the ground all artificial barriers, and let every luminous characteristic of modern life shine in upon our school-rooms. We must pay less heed to what the world was two or three hundred years ago, and regard with greater respect what the world is to-day. Before we devote ourselves exclusively to the arts of expression, we must cultivate all the faculties and encourage the growth of thoughts worthy of expression.

THE ARTS OF EXPRESSION.

Dr. Youmans recently said (*Popular Science Monthly*, May, 1882), "The human mind is no longer to be cultivated merely by the forms or arts of expression. The husks and shells of expression have had sufficient attention : we have now to deal with the living kernel of truth. . . . Under the old ideal of culture, a man may still be grossly ignorant of the things most interesting and now most important to know. . . . Modern knowledge is the highest and most perfected form of knowledge ; and it is no longer possible to maintain that it is not also the best knowledge for that cultivation of mind and character which is the proper, *i. e.*, the highest object of education."

I desire, for a moment, to direct your attention to the arts of expression. Next in rank to the ability to think deeply and clearly is the power of giving clear and full expression to our thoughts. This last can be done in various ways. As this brings me squarely upon a subject I wish to impress strongly upon you, I will illustrate it by a somewhat elaborate example.

A gentleman recently called upon me for my opinion concerning a certain automatic brake for freight cars. The device was new to me, but it lay pretty clearly defined in the mind of my visitor. It was not original with him, but, for the purposes of my illustration, it might have been. Before I could pass judgment, the device must lie as clearly in my mind, perhaps more clearly, than it did in his ; so he set out to express his thought. He was what we call well educated, being a graduate of the oldest university in the land, and was well versed in the conventionalities of spoken and written languages. Accordingly, he proceeded to utter a succession of sounds. His lips opened and shut with great rapidity, and, without intermission, a series of sounds fell upon my ears. The sounds I heard were quite familiar to me, as I had been listening to them, in one order and another, for over forty years, and, as they had always been associated in my mind with certain concrete things, and the relations of such things to each other, certain thoughts about those things began to take shape in my mind.

Of course the sounds I heard had not the smallest likeness to the things called up by them in my mind. To an Italian peasant, or to Archimedes of Syracuse, they would have been as unintelligible as the chattering of a magpie. They were purely arbitrary or conventional, yet much of our education had been devoted to their mastery ; nevertheless, as a means for expressing thought, they were in the present case quite inadequate. The ideas aroused in my mind were

confused and fragmentary, and altogether unsatisfactory. The images lacked precision. Had my friend resorted to writing a description of the invention in either English, French, German, Latin, or Greek, using in every case a set of purely conventional symbols (to represent the other set of conventional sounds) which we had both spent years in getting some knowledge of, he would have succeeded little better. Whether speaking or writing, much of his thought he could not clothe in words. He therefore abandoned the wholly conventional or verbal art of expression and turned to the *pictorial*.

But here he soon confessed that his education was deficient. He had never studied the art of representing objects having three dimensions on a surface having but two, and hence he was ignorant of the methods he ought to adopt to express by drawings the objects he was thinking of. However, I caught more of his meaning from some crude attempts at sketching than I had from all his talk. A few lines were luminous with meaning, yet they left far too much for me to supply by my imagination; hence my visitor withdrew and sent me a full set of what were called "working drawings," made by the inventor, who was a draughtsman.

These drawings, though a sort of ocular resemblance to the things signified, were still half conventional, and required on my part a certain amount of training to enable me fully to understand them; this, fortunately, I had received, and through the art of expression embodied in them, I gained a tolerably clear idea of the thought of the inventor. With scarce a written or spoken word they expressed that thought far more clearly and fully than any merely verbal description could do; they showed the relations of parts which were beyond the reach of words.

But my friend was not content to stop there. The drawings had been but partially intelligible to him, with their "plans, elevations, and sections," and, judging me by himself, he believed that a third art of expression would out-value both the others; he therefore invited me to call at a shop and examine a specimen of the device itself, produced by a skilled mechanic.

The *real article*, which is the mechanic's art of expression, proved to be an improvement even upon the thought of the inventor. The latter had not been a mechanic, and he had made the sort of mistakes that draughtsmen who are not something of mechanics always make. Certain parts it had been practically impossible to construct, as they involved shapes that could not be moulded by ordinary means. A nut had been placed where it was next to impossible to turn it, and certain parts, which were to be of cast-iron, had been given such dimensions

that the castings would have snapped in pieces while cooling. These errors had been corrected by the mechanic, and the perfected thought lay fully expressed before me

In this illustration we have three greatly different methods of expressing essentially the same thought. Each constitutes a distinct language, and each is absolutely essential to modern civilization. You will note how a crude thought often takes practical shape in the hands of the draughtsman and the mechanic. "Drawing," says Prof. Sylvanus P. Thompson, "is the very soul of true technical education, and of exact and intelligent workmanship." Those who have tested this can tell how many marvels of ingenuity, as lovely as a *chateau d'Espagne*, have vanished in the presence of "plans and elevations," and how many beautifully drawn designs have been mercilessly condemned as impracticable by judges versed in the laws of construction and the strength of materials.

Much more could be said upon the arts of expression, their relative importance and proper cultivation. You will readily think, as did Lessing in his *Laocoön*, of poetry, painting, and sculpture. You will recall how lofty thoughts have in all ages found expression in architectural forms; and yet, throughout all the history of architecture, the laws of mechanics, as then understood, and the properties of the particular materials used, have determined the different styles.

In our own age we are trying to express ourselves in iron and steel, and to cast off the fetters of an age of marble and granite.

In a recent address, Mr. Charles H. Ham, of Chicago, said, that by putting thought into seventy-five cents' worth of iron ore, it is converted into pallet-arbors worth \$2,500,000." He continues: "Skilled labor is embodied thought,—thought that houses, feeds, and clothes mankind. The nation that applies to labor the most thought, the most intelligence, *i. e.*, that best expresses its thoughts in concrete form, will rise highest in the scale of civilization, will gain most in wealth, will most surely survive the shocks of time, will live longest in history."

But some one will say, as to methods of expression, "one art is enough for me: make me master of one, and I will care for no second." I answer, you are thinking of an impossibility. If a mechanic is only a mechanic, he is never a master, even of his own art. He is crippled at every turn; he is limited in expressing himself to what he can make; he is without that powerful ally, drawing,—the short-hand of the imagination,—and, in the presence of thoughts that baffle concrete expression, he is dumb. Valuable machines even are sometimes purely imaginary. Clerk Maxwell, in his "Theory of

Heat," says, "For the purposes of scientific illustration we shall describe the working of an engine of a species entirely imaginary, — one which it is impossible to construct, but very easy to understand"; referring to Carnot's engine

In like manner, if one would command confidence as a draughtsman, he must be a mechanic as well. And finally, if I am a student of words alone, and if I go not beyond my dictionaries, I shall never guess their meaning. A large proportion of our emphatic words is technical: they belonged originally to some craft; and none but a craftsman knows their exact meaning.

President Eliot, of Harvard, once said that the highest education was that which gave one the fullest and most accurate use of his mother tongue. I would modify the statement, and claim that the highest and most liberal education is that which, besides cultivating most fully the powers of thought, gives one full command of all the arts of expression.

I need not remark that many, perhaps most, thoughts do not admit of concrete, nor even of pictorial, expression, as, for example, all abstractions; hence they suffer seriously from want of clearness. If you have a clear thought on abstract matters, you can never be sure that you have expressed it clearly.

The thought must precede its expression by any method; and, in the cultivation of the thinking mind, the concrete should precede the abstract. Give children clear and accurate thoughts of real things, of the material world we live in, of real plants and animals, of the laws of materials, of qualities, and then of quantities, before you venture into the field of abstractions. Before you cultivate the high arts, make sure of the low ones: without them as a foundation, no superstructure of fine art can stand over night. As Emerson says (in "Man the Reformer"), "We must have a basis for our higher accomplishments, our delicate entertainments of poetry and philosophy, in the work of our hands. We must have an antagonism in the tough world for all the variety of our spiritual faculties, *or they will not be born.*"

CLEAR-HEADEDNESS.

A habit of clear thinking once formed will never leave us, however abstract our investigations become; while a habit of stopping short with ill-defined results, of resting content with obscure and half-grown mental images, a mental attitude of foggiess, has a stultifying effect which seriously dwarfs the mind. This is a most important subject; but I have place for but a few words of exhortation.

Give children clear thoughts, and begin with the concrete. When the mind is too weary or too sick to clear up obscurities, it is time to seek rest and recreation and fresh air. Beware of straining the powers of attention by too much schooling; beware of overtaxing the mind by too many and too difficult subjects; and especially beware of poisoning the blood and debilitating the brain by bad air. The fruit of any and all these evils is mental as well as physical decrepitude.

THE AIMS OF EDUCATION.

But to return. I claim for the three forms of expression, which I have taken pains to distinguish, more nearly equal care and consideration in the education of every child. Teach language and literature and mathematics with a view to make each child a master of the art of verbal expression. Teach mechanical and free drawing with natural tints and with the conventions of shade and color, and aim at a mastery of the art of pictorial expression. And lastly, teach the cunning fingers the wonderful power and use of tools, and aim at nothing less than a mastery of the fundamental mechanical processes. To do all these things while the mind is gaining strength and clearness and materials for thought is the "Function of a Manual Training School." *

PREJUDICES TO BE OVERCOME.

The traditions are heavily against us; but the traditions of the fathers must yield to the new dispensation. As was to have been expected, the strongest prejudices against this reform exist in old educational centres. As President Walker, of the New York Board of Education, frankly admitted at the laying of the corner-stone of Prof. Felix Adler's splendid institution, "The Workingman's School and Free Kindergarten," — the methods and aims proposed by the advocates of manual training schools are a criticism upon the methods and aims of the established system, and nothing is more natural than for it to resent criticism and discourage reform.

No man has done more — nay, no man has done as much — to introduce the manual feature into American education as Prof. John

[* "It is possible to teach only by four methods: 1st, oral explanation given by the teacher; 2d, written explanation taken from books; 3d, graphic explanation rendered by drawings; 4th, practical explanation obtained from execution. Up to the present time only the first three methods of demonstration have been employed, and nothing but theorists produced; the moment that it is desired to train practical men, the fourth method will be added, and technical education will have been founded." — *Messrs. Gaumont and Guemied before the French Imperial Commission, 1865.*]

D. Runkle of Boston ; and yet the School of Mechanic Arts, established by him in connection with the Massachusetts Institute of Technology, has, after an existence of several years, been apparently almost frozen out in the biting atmosphere of that highly æsthetic city. I doubt if one could find on American soil a more unpromising field for a manual training school than beneath the lofty elms of Cambridge and New Haven.

LUXURIES IN EDUCATION.

There are luxuries in education, as in food and dress and equipage, and in wealthy communities the luxuries command the chief attention. At the English Universities of Oxford and Cambridge a large proportion of the students expects to be gentlemen of leisure. The idea of giving heed to the demands of skilled labor, of preparing for lives of activity and usefulness, the idea of *earning* one's daily bread and of supporting one's family, scarcely enters their heads. Either they inherit livings, or they seek to get livings through the church, or they enter the army with commissions purchased by kind friends who wish to get them out of the way, or they go into law and politics. It is no wonder that such men devote themselves largely to the luxuries of education, to pure mathematics, astronomy, philology, Greek, Sanscrit, Latin hexameters, Italian, — in a word, to "polite" learning. In such an atmosphere as that, how incongruous is this plea of mine for an education to *things* ; for a training of the hand and eye, as well as the intellect, to lives of useful employment ! Yet half the colleges in the United States ape the English universities, and half the high schools ape the colleges. The result of all this has been a certain false æstheticism, which turns away from the materialism of our new notions. The highly cultivated would soar away into purer air and nobler spheres. There is a feeling, more or less clearly expressed, that the material world is gross and unrefined ; that soiled hands are a reproach ; that the garb of a mechanic necessarily clothes a person of sordid tastes and low desires. As Dr. Eliot, of St. Louis, has expressed it, " It is thought to be a sad descent for a university, whose aim should be the highest education, to stoop to the recognition of handicrafts of the mechanic."

MANUAL EDUCATION.

Perhaps no better general statement of the new creed has been made than that of Stephen A. Walker, in a speech already referred to. He put it for us thus : " Education of the hand and the eye

should go along with, *pari passu*, the education of the mind. We believe in making good workmen as well as in making educated intellects. We think these are things that can be done at the same time; and our proposition is that they can be done better together than separately."

As I said in the beginning, this proposition is meeting with general favor among the people. I have pointed out the sources of some of the opposition: it remains for me to touch upon the two objections, which I surmise are about the only ones in the minds of my hearers. You ask first, "Is your proposition practicable?" You doubt the feasibility of uniting in a real school such incongruous elements as arithmetic and carpentry, history and blacksmithing. You fear either that the shop work will demoralize the school, or that the shop work will never rise above the dignity of a mere pastime.

Now I claim not only that what I propose can be done, but that it has been done in St. Louis, and perhaps elsewhere as well.

ORGANIZATION OF A MANUAL TRAINING SCHOOL.

Prof. Thompson, in his valuable essay on the apprenticeship schools of France, classifies French technical schools under four heads:—

- I. The school in the workshop or factory.
- II. The workshop in the school.
- III. The school and the shop side by side.
- IV. The half-time schools.

In the first class the school is subordinate to the factory; the boys or girls learn a particular trade, and everything in the school as well as in the shop is designed to meet the wants of those expecting to enter the particular trade. For obvious reasons there can be no general adoption of such a combination in this country. Prof. Thompson gives his verdict in favor of the school and the shop side by side, though there is much to recommend the second plan.

No one of the French plans exactly suits me. I prefer to incorporate manual with intellectual education, and include both under the name school. We don't have what you call school in the morning and shop in the afternoon; nor do we spend the forenoons with tools and devote a few evening hours to study and recitation. We mix up the old and the new without the least compunction.

Nothing can show at a glance just how our school is managed as well as our daily programme.

DAILY PROGRAMME USED DURING THE FIRST TERM, 1881-82.

<i>Classes.</i>	<i>Divisions.</i>	<i>9-11 A. M.</i>			<i>11 A. M.-1 P. M.</i>				<i>1-3 P. M.</i>			
Second Year.	A.	Shop Work.			40 min. Algebra.	40 min. English Hist.	20 min. Study.	20 min. Recess.	40 min. Physics.	20 min. Study.	60 min. Drawing.	
	B.	60 min. Drawing.	20 min. Study.	40 min. Algebra.	Shop Work.				20 min. Recess.	20 min. Study.	40 min. Physics.	40 min. English Hist.
First Year.	A.	Shop Work.			60 min. Drawing.	20 min. Recess.	40 min. Gram'ar.	40 min. Arith.	40 min. Study.	40 min. Physical Geog.		
	B.	40 min. Gram'ar.	20 min. Study.	60 min. Drawing.	Shop Work.				20 min. Recess.	20 min. Study.	40 min. Arith.	40 min. Physical Geog.
	C.	40 min. Arith.	40 min. Study.	40 min. Physical Geog.	40 min. Gram'ar.	20 min. Recess.	60 min. Drawing.	Shop Work.				

- NOTES. — 1. Penmanship takes the place of Physical Geography and Physics once a week.
 2. Each class has a Music Lesson once a week, extending the daily session half an hour.
 3. Composition takes the place of Grammar and History once a week.
 4. Spelling occupies half the study time three times a week.

There is here no confusion, no sense of incongruity. The boys go as soberly to shop as to recitation, though I ought not to fail to add that, almost without exception, they delight in the use of tools and it is no small punishment to be kept from the shop for some neglected lesson.

The Manual Training School of St. Louis differs from all other technical schools with which I am acquainted. It much resembles the Boston School of Mechanic Arts, though it differs from it in admitting boys at fourteen instead of fifteen years of age, in having a three years' course instead of two, and in having a full and independent equipment of study and recitation rooms as well as shops.

I gladly avail myself of this occasion to publicly acknowledge our indebtedness to the able reports and papers published by Ex-President Runkle on the Russian system of tool instruction, and the organization and work of his school.

All European schools of the same grade as ours are more or less devoted to particular trades, excepting the school at Komatan, Bavaria (and perhaps other similar schools), where the shop work is three times as much per day as with us, and where book learning is crowded between very narrow limits.

In like manner all other technical schools in this country are either devoted to single trades, or they are of a higher grade.

PROSPECTUS OF THE SCHOOL.

A prospectus of our school has just been issued, giving in detail our course of study and the methods of tool instruction. I shall be happy to give a copy to every one who is sufficiently interested to ask for it. To those who do not care for the details, I will say that our course of study runs through three years, in five parallel lines : three intellectual, two manual.

- I. A course in Pure Mathematics.
- II. A course in Science and Applied Mathematics.
- III. A course in Language and Literature.
- IV. A course in Penmanship and Drawing.
- V. A course in Tool work in Woods and Metals.

Our school is not managed on the assumption that every boy who goes through it will work as a mechanic, or that he will be a manufacturer. Our graduates will doubtless find their way into all the professions ; we strive to help them find their true callings, and we prejudice them against none. I have no sort of doubt, however, that the grand result will be that many who otherwise would eke out a scanty subsistence as clerks, book-keepers, salesmen, poor lawyers, murderous doctors, whining preachers, abandoned penny-a-liners, or hardened school-keepers, will be led, through the instrumentality of our school, to positions of honor and comfort as mechanics, engineers, or manufacturers.

NO ARTICLES MADE FOR SALE.

For the purpose of discountenancing certain grave popular fallacies in this country, I will add a word, even at the risk of repeating what I have said elsewhere, as to our plan of shop management. We do *not* manufacture articles for sale, nor do we pretend to fully teach particular trades.

A shop which manufactures for the market and expects a revenue from the sale of its products is necessarily confined to salable work, and a systematic and progressive series of exercises is practically impossible. If the shop is managed in the interest of the student, he is allowed to leave a step or a process the moment he has fairly learned it ; if it is managed with a view to an income (and the school will be counted a failure if its income is wanting), the boys will be kept at what they can do best, and new lessons will be few and far between. In such a shop the pupils will suffer too much the evils of a modern apprenticeship.

"The common apprentice is a drudge set to execute all kinds of miscellaneous jobs. There is no systematic gradation in the difficulty of the exercises given him; more than half his hours are purely wasted, and the other half are spent on work unsuited to his capacity. What wonder that four, five, or six years make of him a bad, unintelligent, unskilful machine!"—*Prof. Sylvanus Thompson.*

A very bright boy of seventeen years had expected last fall to enter a pattern-shop in St. Louis as an apprentice, but was disappointed, there being no vacancy in the number of apprentices *allowed*. He therefore came to the Manual Training School, and during the year made excellent progress not only in carpentry and wood-turning, but in drawing, mathematics, and physics. When he showed me some of his handiwork at the close of the year, I asked him if he would have made equal progress as an apprentice. "No," said he; "I should have spent most of the first year sweeping out offices and running errands." *

SELF-SUPPORTING SCHOOLS.

I fancy there is no more pernicious fallacy than this, of making a school self-supporting by manufacturing for the market. Suppose you attempt to maintain one of those popular humbugs, a commercial college, on that theory; or to run a free medical school without endowment, on the self-supporting plan (the student would probably write prescriptions *cheap* and cut off legs for half price); or to manage a public school of oratory and English composition on the strength of an income derived from contributions to newspapers and magazines and from orations made and delivered to order. Nothing could be more absurd; and yet the cases are closely parallel. No, do not be beguiled by the seductive promise of an income from the shop. Admit from the first the well-established fact that a good school for thorough education, on whatever subject, costs money, both for its foundation and its support.

Closely connected is the matter of teaching particular trades, to which the lads shall be strictly confined. Such a course may work well in monarchies, where the groove in which one is to run is cut out for him before he is born, but it is unsuited to the soil and atmosphere of America. A single trade is educationally very narrow, while their number is legion. "The arts are few, the trades

* Since the above was written, a gentleman told me of his father's experience when learning the trade of a tanner in Philadelphia many years ago. He lived in the family of his employer, and *during the first six months he tended the baby.*

are many," says Mr. Runkle. The arts underlie all trades ; therefore let us teach them as impartially and thoroughly as possible, and then it is but a step to a trade.

BUT A STEP TO A TRADE.

And this brings me to a very important point. Admitting that with a suitable outfit of tools, shops, etc., a programme such as I have described can be carried out, you ask, "*Cui bono?*—what, after all, is the manual training acquired at school good for? Has the mind been nourished through the fingers' ends? Has the hand gained any enduring skill? Is it really but a step from the door of the manual training school to the shop of the craftsman?"

Experience answers all these questions satisfactorily, and adds that there is scarcely a calling in society that is not edified by manual training. Rousseau once remarked that "to know how to use one's fingers gave a superiority in every condition in life." I recently made systematic inquiry among the parents of my boys as to the effect of the one or two years' training on our pupils. Their reports on the points now under consideration are both interesting and encouraging. They write:—

"Gerald takes great interest in fixing up things generally."

"Charles fixed my sewing machine."

"George has made many little matters of household utility, and seems to delight in it."

"We go to Henry to have chairs mended, shelves put up, etc., and he does excellent work. He made a fine set of screen frames."

"The mechanical faculty was quite small in John's case, and it has been developed to a remarkable extent."

"Leo does all the jobs around the house"; and so on for nearly a hundred pupils.

Again, the parents testify to an increased interest in practical affairs, in shops and machinery, and in such books and periodicals as the *Scientific American*. Beyond question, there is a certain intellectual balance, a good mechanical judgment, a sort of level-headedness in practical matters, consequent upon this sort of training, that in value far outweigh special products. Said Rousseau, in his "Emilius," one hundred and twenty years ago, "If, instead of keeping a boy poring over books, I employ him in a workshop, his hands will be busied to the improvement of his understanding ; he will become a philosopher while he thinks himself only an artisan."

As to enduring skill, I will let you judge for yourself. The blacksmithing has occupied the second-year class about two hundred

hours, ten a week. Each man had his forge and set of tools, and each executed substantially the same set of pieces. Here is a partial set of the work done. The pieces are numbered in the order in which they were done. They were first wrought in cold lead, while the order of the steps and the details of form were studied, and then they were executed in hot iron. I have a few of the lead specimens here. The boys have not yet learned to *weld* the lead. The instructor's estimate of each piece is shown in the per cent stamped on it. The pair of tongs was made on time, less than four hours. On the day of our public exhibition, twenty boys worked at the forges about two hours; practical smiths who were present highly commended their work. Their weakest point was their management of the fire.

Prof. Clark wished me to bring some of the wood-work. I could easily have brought a cartload, but I thought it not necessary. The boys do not do *fine* work, of course, as these few specimens show. I however have tracings of the main exercises in wood-work.

One of our engineering students, who had had about one hundred and twenty hours in the blacksmith's shop and an equal time in the machine shop, writes to thank me especially for insisting upon his shop practice. Without it he would have had to decline a fine position which with it he filled satisfactorily.

As our school has seen but two years, I cannot appeal to its graduates to answer the question "How far is it from our door to positions as journeymen mechanics?" hence I avail myself of the testimony of Mr. Thomas Foley, instructor of forging, vise work, and machine tool work in the Boston Mechanic Art School. He had himself served an apprenticeship of seven years, and, after several years at his trade, had given instruction for five years. We must consider him a competent judge. In his report to Prof. Runkle, and contributed by the latter to the recent report of the Secretary of the Massachusetts Board of Education, Mr. Foley says: "The system of apprenticeship of the present day, as a general rule, *amounts to very little for the apprentice*, considering the time he must devote to the learning of his trade. He is kept upon such work as will most profit his employer, who thus protects himself. . . . Now it appears like throwing away two or three years of one's life to attain a knowledge of any business that can be acquired in the short space of *twelve or thirteen days* by a proper course of instruction. [I take it that by twelve days he means one hundred and twenty hours, distributed over about forty days.] The dexterity that comes from practice can be reached as quickly after the twelve days' instruction as after the two or more years spent as an apprentice under the adverse circumstances mentioned above."

Mr. Foley secures the best results from lessons only three hours long. He adds: "The time is just sufficient to create a vigorous interest without tiring; it also leaves a more lasting impression than by taxing the physical powers for a longer period. We have tried four hours a day, but find that a larger amount of work and of better quality can be produced in the three-hour lessons."

I consider this testimony of Mr. Foley very conclusive: it effectually disposes of the claim often put forward by practical men, that no boy can learn a trade properly without going to the shop at seven o'clock in the morning and making his day of ten hours, "man-fashion," and that dirt and drudgery and hard knocks, and seasons of intense weariness and disgust even, are essential to the education of a good mechanic.

THE COST.

It remains for me to touch upon the second important question you all have in your minds, namely, that of the cost. You are practical men and women, and you wish now to sit down and count the cost.

We set out in St. Louis to have the best of everything. We bought the best tools, and put in the best furniture. We have plenty of room and light and pure air. We aim to have good teachers and all necessary appliances. Our capacity is about 240 boys, in three classes of 100, 80, and 60 in the first-year, second-year, and third-year classes respectively.

Our building complete cost about	\$33,000 00
Our tools and school furniture	16,000 00
If we add the cost of the lot (150' X 106½')	14,400 00

We have as the total cost of our plant	\$63,400 00
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The building is of brick, three stories high, and very substantial. A perspective view of it, with the three floor plans, is given in the little prospectus already referred to.

Where land is cheap, and less or lighter machinery is used, less money would suffice; but let no one deceive himself by supposing that the reform proposed is to be at once a money-saving one. Such a school costs money; but it is a grand investment. Said one of our benefactors to me not ten days ago, "I feel better satisfied with the money I have put into the Manual Training School than with any other money I have invested in St. Louis."

The same objection, the cost, applies to chemical and physical lab-

oratories of colleges; and one of the main reasons why so many so-called colleges in the Western States devote their attention almost exclusively to classics, mathematics, and history, is that they are too poor to properly cultivate chemistry and physics and practical mechanics. As to the cost of instruction, the shop is about as expensive per hour as the recitation and drawing rooms. Good mechanics, fairly educated, who are at the same time endowed with the divine gift of teaching, are rare. We have a first-class machinist and an expert blacksmith, and pay each \$1,200 per year. The size of our divisions is generally limited to twenty members. In drawing we shall occasionally "double up." Incidentals — wood, iron, paper, etc. — and the wear and tear of tools amounted last year to about \$10 per head. The total cost of supplies and instruction and all incidentals next year is estimated to be \$75 per pupil.

How then, say you, can this costly reform be accomplished? The public schools have no funds to spare, salaries are still too low, and the demand for extensions outruns the supply. As Col. Jacobson, of Chicago, has said, "The alternative before you is more and better education at great expense, or a still greater amount of money wasted for soldiers and policemen, destruction of property, and stoppage of social machinery. The money which the training would cost will be spent in any event. It would have been money in the pocket of Pittsburg if she could have caught her rioters of July, 1877, at an early period of their career, and trained them at any expense just a little beyond the point at which men are likely to burn things promiscuously. It is wiser and better and cheaper to spend our money in training good citizens than in shooting bad ones."

HOW TO GO TO WORK.

There are two ways of going to work.

First. Cut down somewhat, if necessary, the curriculum of higher studies, and incorporate a manual department with your high school. The investment will pay, and the means for further growth will soon be found.

Second. Mature your plans and lay them before your wealthy public-spirited men. Almost for the first time in America, we are harvesting a splendid crop of millionnaires. They abound in every city. They know that boundless wealth left to sons and heirs is often a curse, rarely a blessing, and they would fain put it to the noblest uses. In England, such wealth would naturally go to the establishment of noble families, or the purchase of grand estates,

which should be transmitted unimpaired to oldest sons through successive generations.

Our *American peerage* shall consist of those who devote the gains of an honorable career to the establishment of institutions for the better education of the generations that shall come after them. Let others follow the examples of Cornell and Vanderbilt, of Stevens of Hoboken, Gerard of Philadelphia, Johns Hopkins of Baltimore, Case of Cleveland, Rose of Terre Haute, the Commercial Club of Chicago, and those whom I could name in St. Louis.

ANNUAL REPORT OF THE SECRETARY OF THE INDUSTRIAL DEPARTMENT.

PROF. S. R. THOMPSON, LINCOLN, NEBRASKA.

THE following brief report of the progress of industrial education during the year ending July 1, 1882, is necessarily quite imperfect. Having no official right to ask for reports from persons or institutions, your Secretary has been compelled to rely for information upon the kind courtesy of gentlemen connected with various industrial institutions, supplemented by printed reports, newspaper paragraphs, and the like. To the educational friends who have so kindly responded to his request for information, he takes this opportunity to return sincere thanks.

As last year, an attempt has been made to classify the facts obtained under a few leading heads.

I. NEW SCHOOLS FOR INDUSTRIAL LEARNING OPENED DURING YEAR.

The Storrs Agricultural School, of Mansfield, Conn., was opened in September, 1881. This school is supported by the State, and is intended to teach agriculture and horticulture, with subordinate branches of study. The course will be two years. All students are required to perform a certain amount of manual labor each day.

II. NEW INDUSTRIAL DEPARTMENTS IN SCHOOLS PREVIOUSLY ESTABLISHED.

1. The Industrial Department of the State University of Wisconsin has been greatly strengthened by the addition to its working force of a Professor of Botany and Horticulture, and an agricultural chemist. The latter will assist the Professor of Agriculture in the work of agricultural experimentation. A somewhat elaborate series of experiments in sorghum culture and manufacture, and in ensilage and dairying, were conducted.

2. Purdue University, Lafayette, Ind., has added a mechanical department. In this, instruction is first given in the conditions under which mechanical work is done, the manner in which each tool performs its work, after which the pupil goes to the workshop and learns the manual part by actual practice. Shop work was established in this school before, but the special instruction was added

during the past year. This institution now gives instruction in the following subjects: Bench work in wood, machine work in wood, pattern making, vise work in iron, forging iron and steel, machine work in iron.

The agricultural department has been extended in its facilities by the erection of a large building for its special use in experimental work. It is designed to contain class-rooms, seed-rooms, tool-rooms, and rooms for the display of forestry and horticultural products. The chemist of this school has been made State chemist, thus bringing the school into closer relations with the industrial classes.

3. The State Agricultural College of Colorado, at Fort Collins, has added, during the year, floral and garden departments. The farm and garden departments have been greatly extended. The floral department has a fine green-house for the propagation of plants for experimental purposes.

4. The School of Agriculture, Horticulture, and Botany of the University of Tennessee. The agricultural department of this institution has been enlarged and greatly extended, especially in the line of experimentation.

5. The Virginia Agricultural and Mechanical College has been enlarged by the addition of new departments; viz., horticulture, including pomology, bee-keeping and dairying, a botanical garden, a farmer's garden, together with an experiment station.

6. *Cornell University*.—The department of mechanic arts has, through the generosity of Hon. Hiram Sibley of Rochester, N. Y., added a foundry for iron and brass, and blacksmith shop to its present workshop. Mr. Sibley also gave \$8,000 with which to add to the already large appliances for mechanical education. A new chemical and physical laboratory, costing \$40,000, is in process of construction, and \$18,000 worth of physical apparatus has been supplied during the year, together with \$6,000 worth of models and appliances for civil engineering. A fifth year has been added to the course in mechanics and civil engineering.

7. The Manual Training School of Washington University, St. Louis, has had a prosperous year. Whole number of students was 102, and 100 more are to be added in the coming fall. An additional building, to cost \$30,000, is erecting, and will enable the school to train 240 boys in three classes. Moulding in sand is to be introduced the coming year.

8. The Miller Manual Labor School of Albemarle, Va., spoken of in my last report, has made excellent progress during the year. The workshop, to cost some \$20,000, is about completed, and will be

put into operation in September next. The managers propose to combine in this the Russian shop-work system and that of the Worcester Industrial Institute, — *instruction* and *construction* both. All boys in this school must work a part of each day, thus combining mental and physical labor.

9. The Agricultural and Mechanical College of Texas reports steady improvement and a largely increased attendance. This school has a course of three years.

10. Lasell Seminary, Auburndale, Mass., still continues in an enlarged and more complete form; its handiwork department, cooking, dress-cutting, millinery, china painting, and art needlework are systematically taught. These things are not merely brought in incidentally, but are systematically taught, with all needed appliances to make such teaching effective. Not business nor economy but instruction is the main end of it.

Technical Art Education.

Among the departments in the Technical Art School at Cooper Institute, New York City, are those of engraving, photo-coloring, and drawing. Pupils have made good progress in the various classes. Miss Powers, the teacher of the class in normal drawing, teaches the basis principles of drawing and color and the rules governing all artistic forms. A number of the graduates are employed by jewellers, house decorators, lace makers, carpet manufacturers, bookbinders, etc. Last year the photo-crayon class, under the intelligent direction of Mrs. Ellis, earned \$5,754.59, and the present season will show much increased returns. The engraving class is continually engaged on work for Scribner, Harper Brothers, the Smithsonian Institute, and a publishing house in Detroit. The engravings in *Harper's Bazar* are all done by this class, the pupils of which earned last year \$1,588.14. This year that amount will be doubled. Mrs. Carter reports that more than \$20,000 was earned during the year 1880-81 by pupils in and out of the school; and it may be here observed that all the money received from these sources goes to the pupils directly, none of it being applied to the support of the Institute.

So far as learned, all the new institutions and departments spoken of in my last report are in operation with increasing usefulness.

In nearly all the large cities is a number of industrial schools, usually supported, directed, and sometimes taught by benevolent ladies, and designed to aid the poorer classes to a more worthy and

happy life. The following account of one, clipped from the *Chicago Inter Ocean*, will give a very satisfactory sketch of this class of worthy and useful institutions.

Industrial Schools.

A number of ladies interested in industrial schools for poor children assembled yesterday morning in the Bible work room at Farwell Hall for the purpose of discussing plans of work. During the last three years this particular feature of charitable work has been growing in the city, and from time to time meetings have been held for the object above stated. There has been no special organization, ladies in churches of all denominations being interested and pushing the work in their individual fields of labor. At a previous meeting Mrs. E. P. Rice, Miss E. Dryer, Miss E. Skinner, Mrs. S. A. Kean, and Mrs. Prof. Willard were chosen a committee to present at this meeting a plan for graded work in these schools, where sewing chiefly is taught. Miss Dryer submitted the following as a plan of grading, which was recommended for general use in the Saturday-afternoon sewing classes at the different churches : —

Some Model Lessons.

“The first grade is a trial grade. Instruction is given in holding the needle, length of thread, keeping the work in place, etc. Strips of cardboard are found most useful in this instruction ; canvas is also, because by use of these accurate instruction can be given, such as putting the needle straight through the cloth in overhand work. The children can also count the stitches on canvas. On coarse cloth overhand stitches are found to be the easiest for the child, and altogether best adapted to a variety of instruction.

“The second grade, or entering class, is the patchwork class. Children like to furnish pretty blocks for a quilt. They should be taught to finish what they begin. The blocks should be of pretty pattern and pretty muslin.

“The third grade is the garment class. A trial class introduces the scholar to the class. They should practise making hems, button-holes, fells, and gathers on strips of muslin. Sometimes doll's garments may be made in this trial class, but odd strips of cloth will do as well. The garments are generally simple undergarments, aprons, etc. The object is to teach the child to make useful garments neatly and durably.”

III. NEW AND IMPROVED FACILITIES FOR TEACHING MANUAL ARTS IN SCHOOLS FOR DEAF, DUMB, AND BLIND, AND IN REFORM SCHOOLS.

The Ohio Institution for the Deaf and Dumb has raised carpentry to the position of a regular department, and constant instruction is given in it.

IV. INDUSTRIAL TRAINING IN PUBLIC SCHOOLS.

As regards the introduction of industrial training into the public schools, there is not much to report, though public opinion seems in a transition state upon this subject. Learning that an experiment was in progress in the Dwight School in Boston, a note was addressed to Principal Page, which elicited the following courteous and satisfactory reply :—

BOSTON, June 12, 1882.

Dear Sir,—Yours of the 9th inst. was received to-day, and I take pleasure in replying that though we cannot claim to have introduced the Russian system to any extent, we have been using the common carpenter tools in two classes of eighteen boys each, during the last four months.

This is an attempt only. We want to see if any simple system of industrial education can be engrafted on our *public school* work.

The School Board furnished the room only; all other expenses were paid by a number of wealthy ladies and gentlemen, who have been for a long time interested in the matter of industrial training, and who wished particularly to see this experiment tried.

We arranged, therefore, that a skilled carpenter should be secured to give the lessons twice a week, on Monday and Thursday, from 2 till 4 o'clock P. M.

The first class of eighteen boys was elected, from the graduating class, and the second from four other rooms. This gave sufficient variety of material to test the plan. Each pupil pledged himself not to fall behind in his regular studies.

The lessons were well graded, the work was marked at the end of each session; school discipline was maintained throughout, and each boy was held to the same accountability as for his geography or arithmetic.

I have the whole programme of lessons given and the per cent of each boy on every lesson. These will be embodied in a report to be made to the school authorities, and may lead to some action on their part. If it does not, the experiment will end here, so far as this school is concerned, as the room will be needed next term for an incoming class of primary scholars.

So far as results go, the experiment was a success. The interest of the pupils, as well as of their parents, the constant attendance, the growing skill in the use of the tools, and the things really well made, all pointed one way.

The only drawback was the complaint on the part of some of the teachers that two hours per week was too much for some of the pupils to give up. They were falling behind. In one instance I felt obliged to send a boy back to his regular work. But an adjustment of the time-table would regulate this.

The school was visited by parties from widely different cities, and I am confident that all over the country an interest is springing up in this matter, which will go far to decide the character of the teaching "that is to be."

Yours most truly, JAMES A. PAGE.

Cooking in the Public Schools of Jamestown, N. Y.

At stated intervals an accomplished lady — officially called the matron — gives theoretical instruction in the art of cooking to the young ladies of the school. The young ladies practise at home, and bring their work to the matron for inspection.

Recently a supper was given to the Board of Education, at which all the food was prepared by the ladies of the class.

V. REQUESTS AND DONATIONS FOR THE PROMOTION OF INDUSTRIAL EDUCATION.

1. An extensive institute of technology, at Terre Haute, Ind., is projected. Prof. C. O. Thompson, the president of this section, has been selected to organize this institution, and is now absent in Europe on business connected with his work. Full particulars have not been obtained, but it is understood that abundant means have been provided to build and equip a first-class school.

2. Mention has been made of the munificent gift of Mr. Hiram Sibley to the mechanical department of Cornell University.

VI. PROGRESS OF PUBLIC SENTIMENT IN REGARD TO INDUSTRIAL TRAINING.

The increased and increasing attention given to this subject must be obvious to the most casual observer of the drift of educational thought. From a large number of letters on this subject, there is space here for but the following brief extracts:—

Hon. D. F. DeWolf, Superintendent of Public Instruction, says, "Public sentiment in this direction is increasing slowly"

Hon. Thomas B. Stockwell, State Superintendent of Public Schools of Rhode Island, says:—

"STATE OF RHODE ISLAND,
OFFICE OF COMMISSIONER OF PUBLIC SCHOOLS,
PROVIDENCE, May 6, 1882.

"Rhode Island moves, I think, but very slowly, however, in the line of industrial education. Our people are naturally conservative; so that while we are almost purely a manufacturing people, we hesitate about taking those steps which seem to point the way unmistakably to higher success in the department of manufactures.

"Drawing has not been adopted as yet as a regular into all of our largest towns even, while it is very seldom found in the smaller villages. It has been introduced, however, into several places during the past year, and the feeling in favor of the study is gaining strength very perceptibly. It has been a fixed study in our Normal School ever since its reorganization in 1871, and the graduates are beginning to be felt in this direction as well as in many others. Within the year a special class in mechanical and industrial drawing has been started in our Providence High School, and it has been quite a success.

"For several years we have had in this city a private school of design, which in a small way has done a very good work and commended itself to the people. At the recent session of our Legislature a bill was passed making a small annual appropriation out of the State treasury towards its support, and giving the State Board of Education power to appoint two of its members on the board of directors of the school, and requiring the school to make an annual report to the Board of Education. As the forerunner of a change of policy in reference to this question, I think the above is entitled to some consideration."

Hon. M. A. Newell, State Superintendent of Maryland, says:—

"Public opinion is slowly but surely forming, prejudices are giving way, newspapers which some years ago scouted the idea of teaching boys to work are now taking up the question for serious discussion. On the whole, the outlook is encouraging."

Thomas F. Conrad, president of the Virginia Agricultural and Mechanical College, says:—

"Virginia is undergoing a great but wonderful revolution, and we are seeking to direct it toward great industrial interests, so that the entire State machinery may be in accord with its natural development."

Several other indications of the drift of public opinion in and out of school may be mentioned.

The organization two years ago of an association of teachers of agriculture and horticulture has some significance. This association, including within its membership teachers from a large number of States from Ohio to Nebraska and Kansas, and from Minnesota to Texas, held a meeting at the Agricultural College of Iowa a few days ago. The object of this meeting is mutual improvement in the details of their special work. When the industrial section of the National Educational Association was formed, it was hoped that its meetings might be the focus of such meetings as the one described; but for some reason this expectation has not been realized. Another peculiar feature of the times is the rapid increase of a kind of peripatetic schools of agriculture called Farmers' Institutes. These meetings are largely used by teachers of agriculture and horticulture

as a means of extending the art of their instruction so as to include practical working farmers within its influence. But instruction is given by others, and in some places the work becomes largely of the nature of a conference. These meetings are having a profound influence in awaking the public mind to the importance of "mixing brains" with farming. During the winter of 1881-82, seven Western States held a greater or less number of such meetings, and others are preparing to undertake it the coming winter.

The following are some of the publications on subjects relating to industrial education which have been made within the year : —

1. THE INCEPTION, ORGANIZATION, AND MANAGEMENT OF TRAINING SCHOOLS FOR NURSES. No. 1 of circulars of the Bureau of Education, 1882.

2. A MANUAL OF HOUSEHOLD ECONOMY FOR THE USE OF SCHOOLS. Published under the direction of the Kitchen Garden Association.

3. HOW TO MAKE A SHOE. An elaborate and minute detail in rhyme of the various steps in making a shoe, each process being illustrated by an engraving.

KITCHEN AND DINING ROOM WORK. By Mrs. H. J. Willard. Chicago : Geo. Sherwood & Co., 1882.

MANUAL EDUCATION IN PUBLIC SCHOOLS. By L. H. Marvel. Boston : New England Publishing Company, 1882.

THE MANUAL ELEMENT IN EDUCATION. By Prof. John D. Runkle, Ph. D. Boston : Rand, Avery & Co.

In conclusion, your Secretary desires to state that this is not offered as a complete account of the movements in industrial education during the year, but it is as nearly complete as the means at his command enabled him to make it. All of which is respectfully submitted.

DEXTERITY BEFORE SKILL.

BY GEORGE T. FAIRCHILD, LL. D., PRESIDENT OF KANSAS STATE AGRICULTURAL COLLEGE.

THE problem of industrial education has intricacies far beyond the simple pro and contra, as most of us know. Every year of experience makes its friends more inquisitive in the ways and means of doing most for those whom our industrial colleges ought to reach. And yet, most of us meet at every turn, among our intimate friends, perhaps, thoughtful, earnest men, to whom the very elementary principles of such education, combining discipline of brains and hands at once, are unseen. Many regard the combination as purely accidental, study for a few hours, work for a few, and play between, without object or method in either. Some still think the instruction of such a course wholly incidental to hand-training, and are surprised at any effort to teach or to learn anything out of the routine of each day's task. I well remember the blank look of astonishment with which a classmate in college reunion exclaimed, when told of my earlier work in such an institution, "What has a professor of English literature to do with an agricultural college?" and the solemn greeting of a doctor of divinity upon our introduction, "I suppose the most of your instruction is in the field, is it not?" Now that most of us have outlived this stage of ignorance, we have still to meet those who have assumed from the beginning that the task for hands is merely an object lesson in exact time with the study of each day, and twist and turn plain straightforward tasks into illustrative practice. Sometimes the lessons are chosen chiefly because of some fancied connection between precept and feasible practice-lessons. You may have heard of the neat little plan for uniting labor with learning, devised in one of our agricultural colleges, in which select passages from Hesiod and Virgil were to be elegantly illustrated by occasional efforts with hoe or scythe, and by weekly visits to the herd and flock. A natural reaction from such dallying with force put a definite trade into prominence, and confined intellectual development within the most apparent needs of the trade. The youth must first make choice of his work in the world, when his school can fit him to his task not only by drill in the details of the trade but by nicely cut bits of science and literature curiously inlaid as an ornament to the art. The aim seems to be to force both brains and hands into the strictest special development. To others, who see that such mere special information gives little growth of intelli-

gence, the necessity for thorough exercise of thought by a general course of study is apparent ; but, since skill in any particular trade comes chiefly by routine and repetition, they jump at the conclusion that such a routine alone can promote the industries. With this is usually combined an ardent faith in inclinations and natural gifts or tastes. Such people admit the necessity of a general training to think, but oppose anything that looks like a general training to do. "Let the boy follow his bent in action," they say, "however much you may bend the twig toward wisdom of thought."

The frequency of these last opinions among the friends of industrial education in the West has suggested my theme, "Dexterity before Skill," and though my treatment of the subject may have nothing new to most of you, those of you who have trodden the same path of experimental thinking upon this problem year after year, seeing where your methods lacked, and watching for opportunity to mend them, may enjoy such a review of first principles, even if you have not found exactly the same application and results. We know by the experience of many generations that extraordinary development of mental energy follows most frequently a generous experience in early life of the world of matter or mind about us, modified by thorough instruction and discipline through books, and finally directed into the special and defined thought of a profession, a science, or a theory. We as little expect a strong and sound judgment from a special line of experience and study alone, as an energetic body from the exercise of a single limb.

The very methods of the schools, so thoroughly and well established, show the general judgment of men of culture, that a balanced course is needed to give character and symmetry to thoughts. The liberal arts have had their prestige, because of such free range in the discipline of thinking ; and the most successful specialists have found use for every part of their general training to think.

Now skill, in its usual growth, follows the line of routine, — the narrower the path the more exact the steps become. We admire the precision of the fingers which never have done any task beside the limited one which wins bread or applause, and explain the accuracy of touch by saying, "Why, they never had anything else to do!" And yet a little careful study of the better kinds and classes of skill convinces one that real skill is not the result of simple routine. All craftsmen recognize the "handy" apprentice, and predict at once a successful career, because he catches so readily the minutiae of motion. This "handiness" is almost certainly the result of early varied experience in action, a general exercise of observation and executive ability in a

great variety of duties. The street gamin finds, even in his absence of steady habits, some recompense from such readiness gained in constantly changing activity. If, then, a systematic training can introduce method for this readiness, the final result in routine itself is made tenfold greater. How often the world, surprised at some surpassing skill or striking power of invention, traces the growth to just such early readiness from experience! Watt, Fulton, and Stephenson gained a knack in handling various things before they wrought their wonders in the special lines which gave them fame. Gray and Edison both gained their ingenuity in a very general training, out of which their special arts of invention have grown. The very power of routine itself I believe is enlarged by readiness first. The dullest artisan finds advantage from any activity that early life has awakened and varied, and the brightest is such principally because his activities are more complete and adjustable to circumstances.

The natural process in the unstudied training of apprentices usual in all the arts is from general to special. The shop boy has no definite tasks; his duties are myriad; his strains and twists and turns to keep up his end of the work are manifold and multiplied. Every workman in the shop is a "boss" to him, and every moment changes his masters and methods. A little later the least defined of special duties fall to his lot, and still his range is wider far than any particular tasks of skilled labor seem at first to demand. This long way around is so sure a way home that any master workman wishing to make his own son an expert would send him through the well-trodden but broad route of every trade.

Now the newer efforts to develop higher skill more rapidly and definitely cannot afford to ignore all this experience of the past methods. Even popular prejudices have some foundations in fact; and this is no new prejudice. We endeavor, in our new methods, to combine a genuine discipline of mind with a genuine skill that may make one, not merely an expert in some line of labor, but a master in its development. We act upon the principle that genius is diligence of training and thinking, and offer a place for thought with practice. We believe that industrial colleges and schools are solving gradually the problem of uniting trained intelligence with readiness in practical affairs, and know how much needed such a union is. In this belief we all agree, and all seek to increase among students that respect for labor, that activity of hands, that sense of duty, that familiarity with details, that knowledge of ways and means and keenness of observation, so clearly perceived to be the

proper end of such training. No one feels that the proper result is a human machine, wound up to go its fourscore years with unvaried accuracy because its ways and motions have been regulated according to rule and routine. And yet the method sometimes proposed, of driving a youth in haste to a trade, and perfecting him in it by confinement, does naturally result in just such machine workmen; and schools that adopt it do not utterly fail, only because they cannot live up to their theory. The best results have come where circumstances have developed natural methods, and the work has grown up from the experience of men already familiar with ordinary training. Each pupil is looked upon as a whole human being, to be put in training that shall give a broader, not a narrower, ability. In the early part of his training the most general ideas must rule, and the general exertions keep pace with them in exercising ingenuity and accuracy in many details one after the other. Just as the handling of saw, hammer, chisel, bit, and plane one after the other gives facility of action in all and a better adaptation of enlarged powers to most duties than any one exercise alone can give, so a more general training in the common arts of life gives a truer use of powers in a special art. It has been found in a somewhat extensive experience that special artisans gained strength from other sources than their specialty. Even a printer or a telegraph operator gains for his task an excellent help in the elements of carpentry. The accuracy in use of eye and hand, gained faster in carpentry than in the other arts, actually shortens the necessary apprenticeship and increases the effectiveness of later efforts.

So our new schools for technical training have naturally, not for theory's sake, adopted methods that place a dexterous use of tools, from the jack-knife to the turning lathe, before any distinct line of training to perfect execution. They may not perfect in a single act so soon as a more special method, but, in the more extensive business of every trade all such drill in first principles counts most and lasts longest. In these essential parts of manual training one can never get "out of practice." So, for the best and surest progress in any limited trade, the teacher will first find as broad a range of manual exercises as can be devised, while the face of his pupil is set in the direction of his business. With repetition and regularity enough to give a definite purpose and standard, he will every day add some new exercise that will, by increasing dexterity, aid in perfecting former efforts. Most of all, he will stimulate the learner to a voluntary choice of new exertion in similar lines, to gain the zest given by *want*, wish, desire. We have found in shop work at the Kansas Agri-

cultural College that almost any purpose in the mind of a student can be turned to account in his general training, and that even a frivolous plan, carefully used, may give better results than the most systematic routine without the stimulant of apparent necessity. For this our superintendent uses his utmost ingenuity to devise a variety of articles the making of which will bring into exercise the greatest variety of manipulations. If the work requires a long look ahead and adjustment of many parts, so much the better; for thinking with acting is the chief source of gain in such training. In this way an earnest purpose gives effectiveness to observation, to question and answer, and to the use of books with training.

Many students have gained in this way a dexterity fairly surprising, in view of the brief time given to practice, and have laid such a foundation for skill as to insure it more speedily than is usual. It is no discredit to the Kansas State Agricultural College that the two principal builders of a thirty-thousand-dollar structure should be from the few young men already sent out from its shops.

But my plea for dexterity before skill is, after all, based upon a broader foundation than readiness in gaining the bread and butter of life through skill. If this *were* all, there is reason enough for making the aim of instruction general first and special afterward; but there are more important reasons still in the relation which educated and trained men must sustain to society. The weakness of society is in antipathies and jealousies between differently interested and differently trained classes of workers. The farmer and the merchant think themselves at loggerheads because they are differently interested in the division of values created by both of them together. Tradesmen generally are ready to combine—or to contend—upon the suspicion of interest to the craft. Like the organist and the bellows-boy, each is disposed to exaggerate his post in the performance, and to crowd the other out of sight and support. But every step of progress in mutual understanding of distinctions helps toward a settlement of mutual interests. The broader basis of skill given by a general training in use of the hands and the senses at the same time opens the eyes to an appreciation of all arts. The clear perception of the nature of skill which such training gives makes one far more ready to grant to such skill its dues. On the other hand, it deprives skill of that false and deluding glamour of mystery, which is so misleading to both its possessor and his neighbors.

When large numbers of thinking men grow out of a common training into specially skilful craftsmen, the trades-unions will have

far less power for evil and far greater power for good. The pitting of craft against craft and interest against interest, now so general, is possible and *probable*, because the supposed distinction of crafts is exaggerated. It helps us somewhat to find that all work is simply motion; if we can add to this knowledge such training in the common motions of all the trades as will help us to know just where our work divides us, we shall be loath to call our neighbor kettle black at every jar of iron against iron.

But still further: division of labor, the chief among methods for effective civilization, is also chief among causes of *danger* to civilization. The weakness of body, mind, and will, so often induced by extreme division, must be provided against by some general elevation of physique, of intelligence, of motive. No better ground can be found for sowing seeds of such elevation than our industrial colleges afford. If the trained hands carried from shop and farm are as ready as the disciplined mind to grasp a host of kindred occupations and do more and more perfect work from the start, there cannot but be a general growth of intelligent labor.

The real demands of this country upon such institutions as ours is not for trained foremen in a limited field, but for experienced men in practical affairs, whose cultivated brains will find a wider scope for growth than the best of trades alone can give. Even in the so-called learned professions, early familiarity with practical affairs forms no mean part of a liberal education, though seldom given credit for its work. We need that such a continuance of this practical training as shop and farm with discipline of mind can give shall send fully equipped men into the business life of the world. The particular art that wins bread will then be a means of association with the rest of the world, not a source of opposition to it. For technical professions, the world long since found a common basis, and has held well to it in education; for practical business life, it is but just beginning to seek for it.

I believe, then, that our usual four years' course of training in industrial colleges has room for more of general effective drill of hands than is usually attempted. If all the fundamental arts of life could be grouped and adjusted in their elements to the first two years of a course, a stronger and more perfect skill would result, though the special recommendation at the end of the course should not be so evident. But best of all, the growth secured in after-life would have tendencies to breadth and ability, of which the world has sore need.

Let both farmers and mechanics, merchants even, and special

artists understand the principles underlying all their arts, and exercise their hands in use of these by simple, common-sense methods. Any loss of time in learning details is more than compensated for by the more perfect and practical grasp of *relations* that makes half the ability of any genuine expert. To speak boldly and frankly, I believe any mechanic will gain rather than lose strength by exercising in the simpler forms of dexterity used by the gardener and farmer, just as the iron-worker is a gainer by his experience with the manipulation of wood; and I know that every educated farmer can turn to good use the dexterity required in the shops and make it a means of skill in his art. I would, therefore, make the general curriculum of drill in arts precede every special training, and treat all skill as the outgrowth of dexterity by adjusting training to advancement in manual just as in mental growth.

ADDRESS

OF

NORMAL DEPARTMENT.

THE TRUE PLACE OF A NORMAL SCHOOL IN THE
EDUCATIONAL SYSTEM.

BY HON. D. L. KIEHLE, STATE SUPERINTENDENT PUBLIC INSTRUCTION,
MINNEAPOLIS, MINN.

THE true place of an institution, as of an individual, is found, *theoretically*, by discussion ; but practically it is found by asserting itself in its ability to take and to hold the position it claims, "possession being nine points of the law."

Discussion is, then, both profitable and natural at the time of or preceding the practical demonstration of the power of the institution to settle questions not at the outset anticipated.

It would not, however, be to the credit of the responsible advocates of normal schools, nor to the advantage of the schools themselves, that this question of their true place should too long be a matter of controversy ; for, if the representatives of education do not yet agree upon the place the normal school should fill, it will not be a surprise if the people, who know more of their cost than their profit, should be in doubt whether, indeed, there is any legitimate place for them, and whether they are not an intrusion and an unnecessary expense.

I must begin this discussion by expressing the judgment that we are quite near the time when this theme should be superseded by others pertaining to the development of the system ; and yet, in view of the unsettled policy and very diverse character of these schools, and the unstable relation they sustain to the system, I am as well satisfied that there is a demand for serious inquiry into the causes of present distrust, and why normal schools have not proven their right to position by taking it and holding it in undisputed possession.

In determining what the orbit of a new planet is or must be, the astronomer takes into his estimate certain fixed data of gravitating tendencies never to be lost sight of. So, in estimating the probable course of any new institution, there are certain social gravitations or tendencies which may always be reckoned upon to dispose it to certain fixed forms. Of those that apply to educational institutions I mention two.

First is the conservatism of habit. What men have *done*, and have believed, is what they are determined to hold to as what ought always to be done, and must still be believed. Intelligence and learning have by no means annihilated this rank conservatism among educators. Teachers of schools have been as set in their forms of

work as ever priest or Pharisee in the dogmas of his faith or the form of his worship; and only some fearless reformer with the spirit of Elijah can compel progress. To know how far reason and reasonable methods have prevailed over prejudice, hear what is said by the author of the article Education, in the last edition of the "Encyclopædia Britannica": "Schoolmasters are still spending their best energies in teaching subjects which have been universally condemned by educational reformers for the last two hundred years. The education of every public school is a farrago of rules, principles, and customs derived from every age of teaching, from the most modern to the most remote."

Now the normal school is the child of the reformers. It is expected to make new paths, to defend new truths; and, in doing this, it must face the opposition of conservatives. But, as normal schools have gained standing, and their teachers have been paid good salaries, the tendency has been to receive men as teachers who have no loyalty to any normal-school doctrines except that teachers should be well paid.

The result in this case has been that normal schools have lost their freshness and vigor. Books are studied instead of things and laws, words are recited, but no ideas or judgment expressed. Pupils may become scholars, but not teachers. An ambition may be fostered to learn a science or practise an art, but not to teach school; in truth, the school falls into the common rank of academies and high schools.

A second gravitating influence is the spirit of aristocratic exclusiveness.

Every man finds it in his nature to associate with his equals or his betters, in preference to those beneath him, either in station or intelligence. So in education, schools had long been open to the wealthy and noble, and universities, as at Prague, Oxford, and Paris, were crowded with students long before Christian philanthropy moved teachers to serve the masses, or to study how children should be taught. In the history of normal schools this disposition can be reckoned as a constant quantity. They will show a continual tendency to ally themselves with higher education and neglect the elementary; they will aspire to a good name for the higher academic, rather than to the self-sacrificing work of promoting primary instruction by better methods and more thoroughly trained teachers.

I name these as diverting tendencies, which go far in accounting for the irregular development of normal schools and the questionable position they still hold in the educational system.

With this prefatory review, I proceed to show the true place and character of normal schools as indicated by the demands of the civilization that called them forth.

The first demand is of that which is known as "The New Education."

When training demanded development of powers, mental, moral, and physical, by which the pupil might sustain an independent relation to the world, gaining ideas by his own observation and forming judgments by his own reason, then it appeared that teaching is a high art, that a scholar is not necessarily a teacher, that learning symbols of ideas or judgments does advocate and is representative of the new education. Its chief end must be to make teachers practically familiar with the laws of the mind, the order in which its faculties develop and mature, the best practical methods of directing these growing energies in observation, memory, imagination, language, and reason, together with giving them such practice under criticism as will enable them to execute according to their theory. Of course this is only reaffirming what has come to sound almost trite, — that normal schools must be characterized by their professional work.

I have known so-called normal-school men who have defended the academic character of their schools and the quite entire absence of professional work on the plea that we learn best how to teach by being well taught; that is to say, that normal schools have no distinctive work separate from that of all good schools, or that no good teaching is done outside of normal schools, these having been established to furnish the world a proper standard, — an assumption both gratuitous and offensive.

Again, very immediately related, is the responsibility of normal schools in elementary instruction. But while learned doctors were leading thought in the great universities, and doing great things with great subjects, philanthropists, as Rousseau, Comenius, Pestalozzi, and Froebel, gave their best thought to the children, and in reward have gained names that will be held in honor as long as the children have friends.

And now as to the character of the professional work, there are two well-defined departments. In the first, normal schools should train philosophic teachers, — teachers with that masterly comprehension of the entire field that will enable them and dispose them to make new and safe paths, and be ever fresh and inventive. This department is by all means of the highest importance, and never to be lost sight of. Yet, taking a practical view of the demand, it is

just as evident that for the leader there must be many followers, that the thought and invention of the few may be appropriated and applied by the many who think and labor within a more contracted horizon.

Now *both* departments of this work must be provided for by the normal schools. They must sustain this twofold relation to the profession. They should be allied to the university and radiate their influence from a centre ; but no less should they be near the people, and be practical in detailing work for the rank and file. To exclude the first is to hazard all culture and improvement, and to threaten the profession with the mechanical routine of a superficial mediocrity. To neglect the second is to leave the masses uncared for.

Second, but normal schools have a still more important relation to the system, and a responsibility which, I fear, has not been fully appreciated.

At the very time when educational methods took a new departure, when the education of the children was conceded to be the important and difficult problem, the doctrine of popular education was propounded by the philanthropist, and has now become thoroughly established.

But between doctrine and the realization of doctrine in life there is a great interval, as great as between the ideal and the real. It has entered the creed of every political party that the state ought to make provision for the education of all its children. Yet, after these two hundred years of discussion and advancement, four fifths of the children are not included in any well-organized system of continuous instruction by well-qualified teachers, selected upon the generally accepted principles of civil-service reform.

Here, then, is a field for work, — pioneer work, missionary work, —demanding men of enthusiasm to reach down, or, better still, to come down, in their sympathies to the plane of the people, and with patience to show them the advantages of education and the methods of securing it. Now, in this field, the normal school ought to have a place. It ought to be the school of the prophets, the fountain and nursery of the enthusiasm that shall establish the profession and make it a power in perfecting the entire system of education.

Teaching, like the Christian ministry, belongs to the department of philanthropy. While each has a business side, mere considerations of gain, comparing them with other departments of labor, could not induce talent and learning to undertake either. Hence, the men who serve for money, who see no more in the profession than money pays for, and render only the service paid for, are of but little account in times like these.

It is the peculiar province of the normal schools and the highest department of their professional work to inspire teachers with some adequate appreciation of the importance and honor of their service. They do well in supplying the demand for the graded schools, who are doubtless more appreciative ; but they lose a great opportunity in withdrawing so far from the common schools of the masses, to whom they are closely allied, and to whom they are so immediately responsible. The penalty will be a loss of professional patronage and material support, and the loss of a great opportunity.

To illustrate with a little history that came under my own observation, and in which it was my fortune to bear a small part.

The State of Minnesota has for about twenty years supported three normal schools. Some years ago, whether justly or unjustly need not be said, the opinion prevailed among the people that these schools were local in their usefulness, and too select for the companionship of the people. The country district which sent its promising young schoolmistress to the normal school for better preparation, declared that she had been educated *away from* them instead of *for* them, that she returned with the feeling that to teach a country school would be humiliating to herself, and at least not an honor to the school that graduated her.

Moreover, the apparent exclusiveness of the teachers of normal schools gave the impression that they were impracticable and visionary. They were as carpet knights, or as brave soldiers who knew not the smell of powder.

So the feeling grew ; county superintendents became either indifferent, or they joined the opposition. Legislators reflected the wish of the people, until in an evil day, when the tide of granger influence set in, we were brought to judgment ; in a word, our supplies were cut off.

It was to little purpose that we plead our own innocence and the ignorance of the people. The simple fact was that of 180,000 children, the representatives of 140,000 in the ungraded country schools decided that we had not made apparent to them that we were worth supporting. We took the only wise course. We got a new and probationary lease of existence, and began in earnest to define our position and adjust our relations.

The normal schools shared in the institute work, appointing a practical institute teacher for each of their schools. Normal teachers taught in county institutes, became personally acquainted with country teachers, explained and illustrated before their very eyes that normal teaching was natural and common-sense teaching, and

included all the good features of old ways and some features both new and sensible. We principals got out of our soft places and, with gripsack in hand, started upon an educational campaign among our constituents. We stumped the State. In brief, we undertook to ally the normal schools in sympathy and work with the people, to study the wants of the rural schools, and to do our full share in removing the obstacles to progress.

The result has been that these schools are now firmly established in the confidence of the people. In material support and in patronage their "cup runneth over." And I will venture to say, if I may do it without immodesty, that the normal schools of no State are better sustained by the county superintendents, or send to the country districts a larger percentage of trained teachers, than the State I have named.

In summary, then, normal schools are an organic part of the modern system of popular education for the perfection of all its departments. They are the coadjutors of the district officer, county superintendent, and State superintendent. They are established as a signal service in every quarter of the educational horizon, to report currents and give warning of dangers. They are the pledged enemy of every educational heresy in government or instruction, the advocate and friend of honest work.

The university professor may have his chair, and from it satisfy a well-established demand ; but the normal-school professor must live in his saddle in the field and on the march.

Finally, the demand laid upon normal schools is that they comprehend the best scholarship, the most advanced thought upon the philosophy of teaching, with not only the history of pedagogics of the past, but its problems of the present in process of solution, aggressive and loyal to the best interests of the people.

ADDRESSES

or

DEPARTMENT OF ELEMENTARY SCHOOLS.

ON THE RELATION OF THE PROCESSES OF ACQUISITION
AND MEMORY TO ELEMENTARY TEACHING.

BY GEORGE P. BROWN, A. M., PRESIDENT INDIANA STATE NORMAL SCHOOL.

My theme is akin to some that have been discussed in some of the other departments of this Association, and especially to one elaborated with great ability and power in a paper entitled "The Limits of Oral Instruction." That very suggestive paper has set me to thinking of the signification of the terms *analysis* and *synthesis*, words used to name two methods of obtaining knowledge.

It is said that "There are two methods for the mind to employ in obtaining knowledge, the analytic and the synthetic. The use of the first requires the object of knowledge, with all of its parts and elements and relation of parts, to be before the mind of the learner at the first. When the mind has known the object as a unit, it is to unloose the parts from one another by analysis, and consider them in themselves and in their relations.

.
"The movement of the mind in the acquisition of knowledge must always be from whole to part, if we would prepare the mind for the independent and successful activity in the study of any object or branch of knowledge. A synthetic method of independent study is impossible."

"The primary requirement is that the object of knowledge, with all of its parts and elements and relation of parts, shall be *before the mind* of the learner at the first. *To be before the mind* may mean that the mind already has a vague, or not clear, "knowledge of the object, its parts and elements and relation of parts"; or it may possibly mean that the object is in such proximity to the mind or senses that the mind can contemplate it. The latter interpretation would seem to limit the objects of knowledge to objects of sense. If the former is the proper interpretation of the meaning, it would seem that the process of acquiring knowledge of an object must start from knowledge previously acquired. Then the question arises, "By what process was this knowledge obtained?" If the second is the proper interpretation, then the question recurs, "By what process does the mind gain its first knowledge of an object?" The character of this first movement it seems important to clearly see. Sir William Hamilton gives the following as a psychological law: "The first procedure of the mind in the *elaboration* of its knowledge is always analytical. It descends from the whole to the parts, from the vague to the

definite." He adds, "These two processes, synthesis and analysis, are not, in strict propriety, two several methods, but together constitute only a single method." A conscious activity of the one is impossible without there being at the same time a more or less conscious activity of the other. He says further: "It is manifest in general from the meaning of the words that the term 'analysis' can only be applied to the separation of a whole into its parts, and that the term 'synthesis' can only be applied to the collection of the parts into the whole."

It is evident that in the elaboration, *i. e.*, the *perfecting* or *refining* of its knowledge of an object, the mind naturally proceeds from a whole vaguely known to the parts composing it. But this assumes that the mind already knows a complex whole. The process by which the mind originally constructed that whole must have been a synthetic process. There seem then to be two processes by which the mind naturally gains knowledge of an object: one process, which results in the knowledge of elements that are wholly new and the joining of them to the elements already known; and another, which results in a clear knowledge of the relations of these elements. "To know an object is to be certain that it *is*, and to be certain of its relations to other things, and of its parts to each other and to the whole."

Whether any particular process of acquisition should be termed analytic or synthetic would seem to depend upon (1) what the whole process starts from, and (2) what is the immediate end sought by the instructor.

1. Every object which furnishes an occasion for knowledge to the pupil, and for instruction to the teacher, may be viewed as one of three different wholes. (1.) One of these is the object as it really is,—what the Creator sees it to be. (2.) Another is the whole composed of those elements which the teacher sees in it. (3.) What the child sees in the object forms another whole.

Let us suppose, by way of illustration, that a mind without any experience in knowing, and therefore without any power of using the knowledge gained by one sense as the sign of knowledge that another sense would give, should set out to gain knowledge of an apple. By applying the sense of sight, a knowledge of form and color is obtained. These are all the attributes known by sight. Since the form is space-filling, it can be separated into parts. There is an involuntary or spontaneous act of synthesis performed which unites these two elements into one spatial whole; but no analysis of the whole will give *flavor*, or *hardness*, or *smoothness*, or any other attribute of the apple.

There are new and independent elements given by other senses and by the process of synthesis united with the elements already known, forming a more complex whole. It is true that with every act of synthesis there is an accompanying act of analysis. It is impossible to perform one of these acts without at the same time performing the other; but the process of which the learning mind is most conscious seems to be the synthetic. After the child has learned to perceive and can make use of the acquired perceptions (so called), his act of spontaneous synthesis gives him a much more complex whole, the knowledge of which is made clear by analysis. It seems to be true also, that when the mind is engaged in the study of the elements or parts of a thing, the conditions are most favorable for the discovery of other elements or parts not previously known, which, when discovered, are at once united with the other elements, forming a new whole.

If we occupy the point of view of the instructor who is striving to lead the child to construct or synthesize a whole similar to the whole which he knows, then the process seems to be prominently analytic. Every movement of the teacher's mind with reference to his whole is an act of separation. But, should he chance to discover some new element, he immediately unites that in its proper relation to the other elements, and thus constructs a new whole.

Nor does it seem to be different in learning complex abstract notions. A mind that knows nothing about the state cannot learn anything about it by pursuing rigidly a process of analysis of any whole with which it may start. Suppose that it starts with the word. Its whole is simply an empty form. The process by which that form must be filled is pre-eminently a constructive, a gathering-together process, rather than a process of separation. It is by the study of the relations of the elements found to be in a thing, and of the relations which the thing as known holds to other things, that new elements are brought to view; and in this sense it may properly be said that the analysis supplies conditions favorable to the acquisition of new knowledge.

2. Whether the process of the mind is consciously analytic or synthetic depends, in the second place, upon the nature of the immediate purpose sought to be realized by the instructor. If the end is the acquisition of new knowledge, the process is synthetic; each new element being joined to the old whole by a synthetic judgment,—synthetic from the learner's point of view, but analytic from the standpoint of the teacher. If the immediate purpose is to make the learner's knowledge clear,—to make that which is vague and indefinite clear and definite, by which is meant a seeing of each element

or part of the complex whole in its proper relations to the other elements or parts,—then the process is consciously analytic.

The inductive method is analytic rather than synthetic. By it we proceed from the particular to the general,—from the complex to the simple. The deductive method is prominently synthetic, the mind proceeding from the general to the individual, from the simple to the complex, the general notion ever being less complex than the particular under it.

I now pass on to the consideration of the relation of memory to elementary education.

I shall not consider memory in that special sense which limits it to the power to *re-know*,—to recognize old acquaintances, past experiences,—nor in that other sense, which limits it to the power to reproduce those general notions, which are the products of generalization, and are put under the arbitrary forms of language, but shall give to it the more popular signification of that endowment of the mind which retains and recalls past experiences.

By elementary education, I mean the exercise of that class of mental processes which result in products which we call facts. It differs from scientific education in that there is but little or no conscious study of the logical and necessary relations of these facts by which they are bound together into that unity which we call a science.

By a fact, I mean a synthesis of elements which the mind gathers together and views as a whole, and not as a stage in a process. The universe of mind and matter is an organism. The law of its being is activity. Every thing or fact that is at any moment of time is some stage of one of the infinite variety of processes or movements toward some definite end. It was conditioned by all that preceded it in the process, and it will be the condition of all that follows it. But when cut off from what has preceded and what will follow, and viewed as a whole and not as a part of some great whole, it is a fact. Facts seen in their logical relations constitute science.

Elementary knowledge rigidly defined is a knowledge of these facts as facts. Scientific knowledge is a knowledge of these facts as necessarily related to their antecedents and consequents in the process. Elementary education is, therefore, a leading of the mind to perform those processes which result in elementary knowledge.

But it is needful that we guard against the misconception that there is any period of a person's life when the process of education will be exclusively elementary; when he will deal with facts independent of their relations; when he will be unable to make any gen-

eralizations or inductions. Certain it is that there is no such period after he enters school.

He must generalize before he can make any intelligent use of language. Every word names a general notion, and not a particular. This power of generalization and of induction, by which what is common in the particulars observed is extended to those not observed, is possessed by every child of school age. There is therefore no period of a child's school life in which he is wholly incapable of scientific education. The logical power is weak in early childhood, while the powers of observation, memory, and imagination are relatively strong. The wise teacher makes use of what nature has furnished, and is content to wait for what will not be given until another period.

Having explained what is meant by elementary knowledge and education, I now pass on to a fuller elaboration of the definition of memory.

Memory, as defined above, admits of a separation into different species: —

(1.) There is the *spontaneous* and the *intentional* memory, differing in this, that there is a conscious activity of the will in the one that is not in the other.

(2.) The conscious and the unconscious memory. By unconscious memory is meant that power of the mind to retain its acquisitions and assimilate them so that they become, in a sense, a part of its substance, forming an important element of that complex whole which is called character. It helps to form the soil from which ideas spring when occasion calls for them, the reservoir from which are drawn the materials for reflection and into which many of the products of reflection and observation flow. It is the great conservative power of the mind; nothing that goes into it is lost. It may never afterwards appear in consciousness in the form in which it sunk into unconsciousness, but it is an abiding ingredient of the soul, modifying its capacities and powers.

(3.) There is also a memory of the objects of sense and a memory of objects of reflection. Under sense, memory is the memory of the eye, of the ear, and the like. The memory of the eye may be a memory of form or of color. Reflective memory has under it, memory of processes, of results, of laws, of causes, of similars, of generals, etc. So independent of each other do these powers seem that Beneke declares that memory is not one faculty, but many, and that the cultivation of one memory has no effect upon another.

Of the relative importance of conscious and unconscious memory in education, much might be said. It is a prevalent error among

teachers to undervalue the latter. Many school practices and requirements emphasize the importance of conscious memory. This is well. There are few or none that suggest to either teacher or pupil that what he once knew but has now forgotten is not lost. This is not well. The influence of examinations and class records, and the determining of rank by per cents, are to teach that what cannot be called back into consciousness of what has been learned is of no value. This works the evil, especially in the higher schools, of contracting the field of view of the student, and of causing him to expend his mental energy in recollecting when it might better be expended in assimilating. What is merely recollected still continues to be objective, and, in a sense, foreign to the mind. What is assimilated passes on into character. For this reason it is not strange that the man who leads his class by the examination test often follows far behind when he comes to be judged by the tests that society applies.

I would not be thought to undervalue examination tests, but, rather, to urge the application of such other tests as shall lead the pupil to a just appreciation of the unconscious possessions of the mind.

We are wont to say that the condition of memory is that the object shall first be known; and that to know, the mind must attend; and that attention is conditioned by a feeling of interest. But original knowing, beyond the slight and superficial knowledge which sense, perception, and consciousness enable the infant to experience,—which knows the thing only so long as it is before the senses,—is dependent upon the memory. Without memory, mind could perform none of its other functions. It is, therefore, fundamental to all knowledge.

“Memory is the great keeper or master of the rolls of the soul,—a power that can make amends for the speed of time in causing him to leave behind those things which else he would so carry away as if they had not been.”

The “old education” was probably wrong in some of its practice, but it was orthodox in doctrine when it taught that the mind should be early furnished with a store of true and noble forms which the future is to fill with their proper content.

In considering the relation of memory to elementary education, I remark:—

That, during this fact-acquiring period, the faculty of memory is especially active, particularly that phase of it which recalls individual objects,—the recollection.

Nature has provided that, during this period of comparative inac-

tivity of the understanding, the mental energy shall be employed in the storing up of material for future elaboration. It is the period of the acquisition of forms of knowledge having a small and vague content. These forms of knowledge may be either forms of things in nature, or words, — which are artificial forms of knowledge. The natural forms of knowledge are obtained by the perception of material objects. The child perceives a pebble. He acquires a form like that which the scientist or philosopher has; but how empty is it compared with theirs. He sees only the skin of the thing; a natural skin, it is true, but it has hardly a greater content of knowledge than has a word the meaning of which he does not possess. And this skin is all the child at first cares to know. He attends to it for a moment, long enough to seize it, and then rushes on to some new acquisition. He may inquire what it is, but his question is answered when he learns its name. He has neither inclination nor ability to make an exhaustive study of the pebble. Any effort to force him to do this will result either in failure or in mental deformity.

In learning oral language the child learns to associate the visible form of the object with an audible form or sound. In learning printed language the association is made between two visible forms. This association being made, it will then follow that when either of these is presented to the mind the other will be recalled.

The question is suggested, What is the order in which the child learns words or audible forms? Is it first the thing or natural form, and then the word or artificial form; or, is it first the word and then the thing?

The movement of the mind in *inventing* a language is from the thing to the name. Is this the only proper order of procedure in *learning* a language? Observation of the process by which a child learns to talk will show that the movement of the mind is quite as often from word to thing as from thing to word. Reflection would lead to the same conclusion. The word is a thing or audible form; while the object, pebble, is a visible form. What the mind must do is to associate these two things as name and thing named. There is no psychological law that requires that the mind shall invariably proceed from one to the other rather than from the other to the one. It would require half of a lifetime to learn to talk as well as a child eight years of age, if consciousness of the necessity of a word were made to precede always the learning of the word.

In the acquisition of knowledge from the printed page, or by oral instruction, the movement of the mind is from word to content. "But shall the child learn words the meaning of which he does not

understand? This is mere verbal memory, the besetting sin of the old education." Shall the child learn to repeat any Bible texts, or gems of poetry or prose? In doing so he will learn to use many words that convey to him absolutely nothing of their true significance, let the teaching be ever so skilful.

I formerly knew of a boy who is now an intelligent and valued member of society, who early learned to repeat the text, "The wicked flee when no man pursueth, but the righteous are as bold as a lion." For years he interpreted "the wicked flee" to mean a wicked flea. It would seem that he could have had no conception of the meaning of the text; and yet I believe that in the final outcome it was quite as well for him as it would have been had he spent the time required to memorize the text in a microscopical examination of the insect which his fancy pictured.

I am no advocate of mere verbal memorizing at any stage of one's education; but there is a Scylla quite as fatal to true progress as this Charybdis.

The impulse to make a language is an instinct of the soul. The child is naturally impelled to learn the language which is constantly used in his hearing. There is no apparent reason why he will not seek with as much interest to discover the content of a new word as to learn the name of a new thing. It is not material in what order these are presented. The essential thing is that the child put the best content he is able to form into the word at the earliest moment practicable. The teacher should avoid a literal and narrow interpretation of the dogmas, "Things before words," "The consciousness of the need of a name before giving the name," lest he impede the spontaneous activity of the child, which drives it on to accumulate a store of outlines or moulds of things which future elaboration by the higher powers will fill.

A teacher may be of great service to the pupil at this early stage in his education, provided he does not fall into the error of thinking that everything which the child has known during the term must be at his command, ready for reproduction on examination day; or, that everything which the child learns must be known to the pupil as it is known to the teacher; or, that there is some fixed and necessary order of procedure which requires conceptions to precede words, or words conceptions; or, that the higher powers of comparing, generalizing, classifying, judging, and reasoning are not active in very young children; or, that the study of a book for the purpose of interpreting its language may not be quite as valuable an exercise for the child as a study of the physical properties of the material object.

Prominent among the instrumentalities used by the teacher to lead the pupil to acquire and retain facts and experiences is the text-book. One needs to keep constant guard over himself to avoid a too implicit reliance upon much that is put forth under the supposed sanction of philosophy upon the use of text-books. The logical result of some of these teachings would be the abolishment of the book from the school.

One of the prominent leaders of educational thought in America says: "Books in abundance may be used, and lectures may be given, but they are to be used to call the mind of the student to a fresh and more thorough study of what has before been taught; they are not to be used as the" (student's) "original sources of knowledge." It is in books that we find recorded the thoughts and experiences—the achievements—of the race. Without a knowledge of what has been found out, each one must begin where the race began, and by the slow process of discovery achieve what he may. Each generation would merely repeat the experiences of its predecessor. That in which the world to-day differs from what it was a century or sixty centuries ago is to be found recorded in books. What it is to-day is what its different institutions are. But these are only the embodiment of the thoughts of the past. When we study them we are merely discovering what those have thought who have gone before. The actual institutions of society are, in a sense, books containing the record of former generations.

The great value of a book seems to be that it enables one to realize within himself the essential thoughts and experiences—the spiritual achievements—of the race in much less time than was required for their original production.

A rational study of a text-book causes activities of soul in the student similar to those experienced by the original discoverer. In so far as he experiences their thoughts and feelings, he is doing what the original discoverers did; and, what is more to the purpose, he is being trained in a right method of thinking.

In the text-book is preserved the essential truths which mind has discovered, and the relations of these truths; and these the learner may seize and appropriate without the waste of energy attendant upon the exploration of ways that lead to error, into which the original discoverer was led because of his ignorance. It is through books that the present generation is able to rethink for itself what has been thought in all former times, as a preparation for the forward step in the progress of the race which it is to take. It would seem, then, that the type of school instruction is that which has for its purpose

the preparation of the pupil to take possession of this inheritance by teaching him how to master books. But this does not imply meaningless rote-memorizing. The mastery of books means the mastery of the meanings of words and of thought processes. This can best be done through objective illustration and a practice in the application of these processes to the solution of new problems. A text-book is mastered when the student is master of its ideas and processes; nor does it seem to me that the influence of such teaching is merely to "prepare the mind to understand, it may be, what others have done, but gives it no power to do anything by an independent exertion of its own powers."

Progress toward reform in school teaching will be made, not by abolishing the use of the text-book, nor, as it seems to me, by refusing to make it an "original source of knowledge to the pupil," but by a more rational teaching of it. There is quite as large a field for training "the active powers" of the intellect in seizing and assimilating the thoughts and processes from a printed page as from an object of sense. The condition of progress in both cases is that these thoughts and processes shall be seized and assimilated. What is wanted is not *less* use of text-books, but *better* use of them by better teachers.

Facts of acquisition and memory may be classed as material and spiritual. A material fact is the material object or thing as known. A thing is an embodiment of the fact. A spiritual fact is embodied in the artificial form of words. Either form of expression, as has been already said, conveys to the unlearned but a meagre notion of its full significance. Each person puts into it what is in himself and no more; but, if stored up in the memory, it serves as a nucleus about which other ideas may gather, and into which a larger content may come.

Mr. Payne has said: "Memory will hold in charge many things which are imperfectly understood, formulas whose meaning is obscure, abstract truths which await their explication, definitions to be made clear, sentences which do not transmit the thought of the writer, empty words which are to be filled with meaning, isolated facts which require classification."

Another has said, "A downright scholar is one that has much learning in the ore, unwrought and untried, which time and experience fashion and refine."

WHAT, HOW, AND HOW BETTER?

BY MISS CARRIE B. SHARPE, FORT WAYNE, INDIANA.

In order to do any work well it is necessary to have a definite aim, to keep the desired end in view, and intelligently to direct every effort toward its attainment.

When an architect would plan a ship he must know upon what waters it is to sail, what burden it is to bear, and what speed it should make, and must understand how to plan a vessel which shall meet these requirements. Nor is it less important that the master-builder should understand the plan, and know how to direct each workman under him, so that when all is finished the conception of the architect shall have become a living reality. Just as truly should we who work with mind instead of matter have a definite aim, toward the accomplishment of which every energy should be bent. Have we such an aim?

That education is indispensable to the life of a Republic is an indisputable fact; that public schools are the best-known instruments for securing this education to the masses, is clearly proven by the liberal spirit which the citizens of the United States have shown toward taxation for this purpose. Though the second table of "The Law" is contained in the commandment, "Thou shalt love thy neighbor as thyself," no one supposes this to be the reason the rich provide for the education of the poor in these public schools; but rather is it because universal suffrage is based upon intelligent integrity, and the only hope of the continuance of the government, with its protection of life and property, lies in securing this intelligence.

So far all agree, but who can tell what should be the character and extent of the education the government should provide, and what should be the results by which we may measure our work and judge of its worth? Can the politician who grows eloquent over the public schools as the "corner-stone of our Republic," or the legislators and the "hope of our country," by whose action they are maintained, tell what is their proper place among American institutions? Have the educators, who are the *architects*, or the teachers, who are the *workmen*, a clearly-defined aim toward the accomplishment of which all their work is directed?

One class calls the school a failure, because in spite of the thousands of school-houses scattered broadcast throughout the land there is so large a percentage of illiteracy; and another class, the name of whose leader is familiar to all educators, calls them a failure because crime and vice are not put away from our midst. Others teach that the public schools have to do with the intellectual only; that the study of mathematics and literature, science and art should be pushed as far as possible, but that it is no part of their province to teach the child his duty to God or to his fellow-man. Truthfulness, honesty, patriotism, obedience to law, self-respect, and respect to others are expected to grow spontaneously, or be cultivated elsewhere. And others still claim that only the merest rudiments of an education shall be given to the masses of the people. "Education," say they, "is depriving us of American laborers, and compelling us to import all our artizans, while American youths become petty politicians or second rate professional men."

He who holds the public schools responsible for the illiteracy and crime which abound has failed to remember the thousands of immigrants of every nationality who are annually landing upon our shores, many of whom are from the lowest grades of society; as well as the fact that but fifty per cent. of the children of the United States are in attendance upon these public schools. Two-thirds of the other fifty per cent. are being educated in schools opposed to republican institutions, and the remainder getting their education upon the streets of our cities.

Surely, under these circumstances, the public schools should not be held responsible for the continuance of either crime or illiteracy. On the other hand, it is true that, since ours is a Christian country, acknowledging God as the author of our prosperity and the giver of all the blessings we enjoy, our children should be taught to reverence Him and honor His law. How inconsistent to proclaim upon our coin, "In God we trust," and forbid our children to be taught their dependence upon Him!

Since our government makes the school-age extend over a period of fifteen years (longer than that of any other country in the world), surely those who would limit the work to teaching the masses to read and write must be mistaken.

On the one hand, far too much is demanded; on the other, far too little. Somewhere between these extremes lies the work of the public schools. Since the State undertakes the process of education and provides for the support of public schools, the primary object of these schools must be to make citizens,—citizens of our American Republic in this Nineteenth Century.

Our "Ship of State" is built, but she is still taking on cargo, which must be properly stowed to preserve her equilibrium; and the ocean over which she sails is an unexplored one, full of unexpected rocks, and subject to unlooked for storms; and "the children of to-day," who "will be the architects of our country's destiny in 1900," must be molded and trained into citizens, possessing powers of mind and conscience sufficient to guide this "Union strong and great," so that,—

"In spite of rock and tempest's roar,
In spite of false lights on the shore,"—

her beauty and efficiency shall be retained.

The history of the world shows no such great movement of population as the one now in progress to this country, except that which flowed into the Roman Empire from the north, causing its decay and death. It is estimated that at the present rate of immigration, in thirty years these foreigners, with their children, will equal our entire population. A large number of them will go to the hitherto unpeopled regions of the *far West*, to build cities and create industries for themselves; but many of them will remain in our older cities, to be used by unprincipled politicians in controlling the ballot-box, and all will bring with them ideas of life wholly at variance with republican institutions.

Our only hope of maintaining our distinctive nationality lies in assimilating the better class of those foreigners to American life, and controlling the vicious classes. Who shall do this great work? Our chief dependence must be upon the small army of school-children,—small in view of the great forces against which they must contend; yet, if they are men and women of intelligence and integrity, they shall win the battle.

The centralization of capital, with the opposition to it from trade-unions and communists, presents a difficulty which these children must have wisdom to adjust properly, or upon this rock our Government will be wrecked. The lack of American laborers is due to the fact, not that our schools unfit its pupils for labor, but that our country is in that state of transition which makes it difficult for her children to become expert artizans. The day of apprentices has passed, and skilled labor is demanded, while, as yet, no sufficient means have been provided by which these children can acquire this skill. Schools of manual labor have been proposed as a remedy, but to establish such schools, and make them effective, will require great wisdom and tact.

Ours is an age of wonderful development in every branch of art

and science ; new industries are opening and new resources developing day by day ; old things are passing away, and all things are becoming new with almost panoramic swiftness. No wonder that it is difficult for the school-system to keep pace with the needs of the people. Looking back over the radical changes that have been wrought in American life and thought since the present century was ushered in, and forward to those that are likely to take place before its close, we are convinced that, notwithstanding these many changes, the great need of our country is now, as it ever has been, intelligent, honest, patriotic, law-abiding, God-fearing men and women, and that our work is to do our utmost to help the school-children to become such citizens.

How are we doing this work ? We have an admirable system of public instruction, so perfect in its mechanical workings, and so generously supported, that, by means of it, we have been able to plant school-houses almost within sight of every farm-house in the land, and to give to the teachers in them the latest and most approved methods ; but, alas ! the results are not satisfactory.

Looking over an educational journal, a short time since, I noticed the following from a city superintendent : " The whole country is in a fever of hot discussion by zealous school-men over little points of difference in methods of instruction and discipline, none of them of the slightest importance to the boy who isn't in school," and that is fifty per cent. of the whole ; for, while our government makes abundant provision for the education of her children, she does not compel them to avail themselves of these privileges. In very few of the States have the school authorities any legal right to compel attendance, or to enforce the obedience of those who do attend. This is one reason why so small a percentage of those who enter school remain to complete the course. Parents of bad children do not control them, the school authorities dare not ; and so, for the sake of peace in school, and the lack of power to keep peace while they are there, these vicious children are allowed to leave school and make the hoodlums of our western cities. Their loss is a gain to the school, but a real loss to the government, as these are the very children whom the government must take care of in its prisons and asylums, if it does not retain them in its schools. The article above referred to closes with, " First get the children into school, and then you can work up the best way to handle them." True, but not by discussing " methods of instruction and discipline." These discussions and their outgrowth have built up barriers which prevent the attainment of the very end sought. The object of them all is to make education thorough and practical, and the result is exactly opposite.

A clipping from one of these late discussions says: "The attainment of real mental power, and not high-class standing, should be the incentive to study ;" but this is an utter impossibility in most of our city schools, because there is neither time nor opportunity on the part of the pupil for real independent study, and because both teacher and pupils are bound by a system of marking, which, in spite of all efforts to the contrary, is the controlling force in the school-room. So many are the recitations and exercises which must be put into each day's work, that it requires sore puzzling of brains on the part of the teacher to make a programme which shall include them all, even though the shortest time possible be given to each subject. On the other hand, the amount of ground to be "gone over" in each is so extensive that it becomes necessary to put more in each day's lesson than the *average* child is able to digest, leaving the dull pupil no chance whatever; and since the teacher's reputation and the child's promotion depend upon the marks obtained from the recitations, these marks become the object sought. Why has this condition of things been permitted to grow up and remain? Simply because the school-men, who discuss these questions, decide what ought to be done, and draw plans for doing it, in their offices, with no practical experience in the school-room; and those who do the work have no voice in the *what* or *how much* they shall teach, and very little in the *how* they shall teach it. In the smaller towns the gulf between the controlling power and the working-force is not as wide as in large cities, and for this reason, while they are deprived of many of the advantages of their city cousins, they are able to make stronger scholars.

The city superintendent sits in his office and very carefully arranges his "course of study," making it cover all the subjects educators have deemed necessary to fit the children for citizenship. From the variety of methods for presenting these subjects he selects the most approved. Perhaps the text-book is banished from the teacher's desk, that she may not be a hearer of lessons only; and possibly all chairs are discarded from the teacher's platform, that she may have no temptation to be lazy. That the superintendent may test the thoroughness of the work, he orders frequent examinations, by means of which, together with the carefully-kept records of the daily recitations, he is able (?) to view the results of all this labor. If he examines the manuscripts of the pupils, he is usually disgusted, and blames the teacher for the failure, or goes over his methods again as they are mapped out on paper before him to discover, if possible, what is the cause of these poor results; and then at the summer con-

ventions he will discuss these methods with other superintendents, and these discussions will result in new methods for the ensuing year. In true Emersonian style they try, beginning at one end one year, at the other the next, and in the middle the next, to see which works best ; but, alas ! one is as truly a failure as the other.

The superintendent is faithful in his work and the teacher in hers ; and if this earnest seeker after truth had gone into one of his school-buildings, last winter, and watched the actual work done in the various grades for several successive weeks, he would have discovered that the remedy is not so much in better methods as in giving the teachers and pupils an opportunity to cultivate "mental activity" and intellectual development. He would have discovered, much to his surprise, that the theory which looked so promising upon paper, and appeared so well calculated to stimulate real mental growth, in actual practice absolutely forbids such growth, because of circumstances surrounding it, which did not appear upon the paper. The old method of committing the words of a text-book has been superseded by a new method of cramming a mixed diet into the mind of the child by the teacher, allowing it no time to digest ; hence, when examination-questions, based upon what they should know if the theory had been realized in the practice, are put to the children, they drag up from this undigested mixture odds and ends of everything bearing the faintest resemblance to the words of the question, and the ridiculous answers so frequently printed in educational journals are the result. Poor children ! they are not to blame, neither are the teachers ; but the fault lies in this divorce of theory and practice.

Now, how can we do this work better ? The first two difficulties mentioned must be mended by legislation, but educators must be the power to move the legislators. In some way the government must compel the attendance of these children who are not in school, and must give the school authorities power to compel obedience. This does not necessarily imply corporal punishment, but law is necessary in every community, and certainly so in a community of immature minds who are in a process of training for law-abiding citizens. But law, without power to enforce it, is worse than no law ; and if the school-children discover that there is no power in the authorities over them to compel obedience, why should they not feel that they may break over the restraints of law everywhere ? To obey law and have respect to those in authority should be taught in every school-house in our country, and no one should be in authority over the children who is not worthy of this respect. While the public schools belong to the State, they should be kept out of the reach of poli-

ticians, and all school-officers and teachers should be appointed because of fitness for their work, and for no other reason; and when such teachers are secured, they should be retained during a period of good behavior, instead of being kept in a state of continual suspense as to whether they will be retained from year to year.

Next comes the necessity of a closer connection between controlling power and working force. In cities large enough to require several buildings, thus preventing the superintendent's giving his personal attention to the practical work, there should be some means devised by which the real condition and necessity of each school-room can be laid before those who decide what work shall be done and who shall do it. The principals of these various buildings would seem to be the proper persons to form this connecting link; for, standing between the superintendent, whose point of observation is at too great an eminence to allow him to see way down to the little ones in the baby-room, and the teacher whose horizon is shut in by the narrow limits of one grade, they watch the progress from day to day and year to year, and should be able to judge as to the character and quantity of the work each grade can do; but unfortunately, in most schools, while they are held responsible for the work done under their supervision, they are allowed no voice in deciding these questions.

The attention of educators should turn toward the revision of the course of study with the idea, not of seeing how much can be added to it, but how much can be spared from it, and how that which is retained can be best adapted to cultivate real mental power, and put the child in the way of obtaining information for himself. Arithmetic, which has so long reigned supreme in the school-room, should not be dethroned, but should undergo a radical change as to the *when* and the *how much*? Its fundamental principles, without which no man can be successful in business, should be taught during the first five years of school; for, at the close of the fifth year, but forty per cent. of those who entered school remain, and the sixty per cent. who have left have had no opportunity of learning even the rudiments of percentage, while their time has been spent in learning the science of arithmetic, or in solving curious puzzles in the combination of numbers, all useful as mental discipline, or as a preparation for higher mathematics; but even to those who remain to build upon the foundation so laboriously laid, it would be far better if these deep things were left until their minds were more mature.

Drawing and music are two of the innovations of the last decade which have proven themselves worthy to be retained, and, confined

within proper limits, do a work for the children which nothing else can do ; but the spelling-book, that old-time servant with those endless columns of words, never seen outside its covers, may well be banished from the six lower grades, at least while the spelling in all grades may be far better taught in connection with the reading-lessons ; indeed if reading be exalted to its proper place, it is possible to dispense with all language-lessons, object-lessons, and science lessons, and secure better results than with them. Since it is plainly impossible for the school to give the child all the information necessary to fit him for the duties of life ; and since the mind, like the body, can grow and become strong only by exercise, it is time we stopped cramming children and weakening their intellectual powers by this process. Instead of trying to teach orally, or from a primary text-book, a smattering of every subject under the sun, let us adopt the infinitely better plan of putting into their hands the means of acquiring knowledge, after they go out from school, by teaching them *how* to use those efficient instruments of education which are accessible to all, in the abundance of good literature which our day affords, and the daily newspaper, which, after all, is the real educator of the masses. If, then, the children are taught to read, and a taste for good reading is cultivated, they have an "open sesame" to any of the various paths of knowledge which lie spread out before them. How can we do this ? Not by confining our reading to the reading-book, which, nevertheless, must be retained for drill-work in learning to read, but something fresher and more enticing is necessary to cultivate a desire for reading. In the average city school at least two-thirds of the pupils have papers and magazines suited to their years, and nothing gives them greater pleasure than to be allowed to bring them to school for the teacher's use. If one or more be appointed each day to select a story and read it to the school, learning to read will not cease with the closing of the school-room doors, but there will be searching among the papers and story-books after they get home ; and those children whose parents never thought of taking a paper for them will be so urgently entreated to do so that they will yield, and an educator will be admitted to the very heart of the family.

In the selection of the story to read in school the child will disclose his natural bent of mind, and a faithful teacher can do much toward directing it in a healthy channel, and will find many opportunities presented her for teaching wholesome lessons. Perhaps one child reads a story of some domestic animal ; all the children are familiar with the animal and are anxious to talk about it, and a few moments

spent in such conversation, under the teacher's careful control, may be made a more practical language-lesson than one from any "Language Book"; and if an opportunity be given, the next day perhaps, for the children to reproduce this story upon paper or slate, a writing-lesson, a spelling-lesson, and a composition-exercise will be the result.

Another day the story may be the flying of a kite or the ascension of a balloon, and a science-lesson follows; a science-lesson the children will remember, because their minds were prepared for it by the story. Now, the story may be of a kind and loving deed done by a child to the old, the infirm, or the unfortunate, or it may involve some principle, as truth, honesty, generosity, temperance, or moral courage, and the talk about the story may be made an effective lesson in morals. If the story be of some noble character, the children may be taught to see its beauty and desire to copy its virtues. With the many excellent books of travel, a map, and a mere outline text-book, geography may be taught far better than from a more elaborate text-book.

But how can the newspaper be used in school? Any live teacher who is interested in current news, and feels that teaching her pupils how to read a newspaper will be a real help to them, will find a way to use them, and the method is of the least consequence if the work is only done. A plan, tried with success in the intermediate grades of the school with which I am connected, was to take the first ten minutes after the devotional exercises to inquire what news the evening or morning papers had brought us; each child was encouraged to give his news-item. I placed on file in my office the daily paper of a neighboring city, that the local items might have no attraction. Permission was given the children to add to this file any papers they might think especially interesting and desire their companions to see. To this file they were allowed to come at certain times during the day, thus giving those who had no paper at home but the two-penny local an opportunity to see how much better was the news concerning the real work going on in the world than the petty gossip about their neighbors which fills those local papers. On Friday, at a suitable hour, there was a general discussion of the news of the week. In this way the pupils followed the commotions in foreign countries and the developments in our own. The doings of Congress were carefully watched and reported. One class in United States History, following the discussion concerning the Panama Canal, found the Monroe Doctrine a topic of interest; and in the Fitz-John Porter case, the Geneva Award bill; and the Rosecrans-Garfield letters, the civil war

was brought down to their own times. They followed the President through his lingering illness and death, until all hearts went out in admiration of the great and good Garfield, and *From Canal Boy to President* was read by all who could get it. In the papers came Susan Coolidge's poem, "What made the people love him so?" which was a choice bit of poetry for them to commit, teaching the real secret of a noble life.

In following the "Jeannette" a geography class learned more of Siberia than they would have gained from a month's study of a text-book upon that country; and from the floods in the Mississippi Valley they learned of the nature of that river, and the difficulty the Government has in keeping it within bounds.

While the Anti Chinese bill was pending they studied the character and customs of that people, and read all they could find in respect to their influence upon our country; from the discussion over the Anti-Polygamy bill they realized that our country has a dark stain still left upon her fair face which must be blotted out. No reference was made to party politics, and no one ever knew from these talks over the current history of our country to which party any one belonged; yet independent thought and opinion were fostered, thus laying a foundation for the intelligent casting of a ballot in the days to come.

From the death of Holland they learned of his life and writings, and were anxious to read his books. By the death of Longfellow a new interest was aroused in his poems, many of which had been used as reading-lessons in the early part of the year, and several choice quotations were committed by the pupils. But time will not permit me to tell you any more of the good things our news-lessons brought to us. At the close of the week the papers on file were slipped, and all items worth preserving for future reference were put away in boxes prepared for this purpose, and properly labeled, thus making a convenient library on the "topic of the times." The newspapers also brought us science-lessons week by week in the accounts of the new inventions and discoveries, and the practical shape in which the scientific principles involved were presented made them very attractive, and sent the pupils to text-books upon the various branches of science for fuller information. In this way our reference-library became very popular, and learning how to use dictionaries and encyclopedias, a whole mine was opened up to them. But the newspaper is not the panacea for every evil in the school system, and I am far from advising the dropping of everything else, and rushing headlong into newspaper reading. Such a course would turn a powerful ally into a dangerous enemy. Much poor scholarship is due to the lack of

studious habits which has arisen from the prevalence of oral teaching. Strong men and women can never be made by smoothing the way for them too much. Having opened up this vast field of information, our next duty is to teach them to select from it that which is best adapted to their individual needs, or the necessities of the times; how to make it their own, and how to use it to a purpose. The mental activity and ability to concentrate thought upon the subject under consideration, necessary to the accomplishment of these objects, comes only by hard work. For this purpose the study-hour should be jealously guarded from interruption, and the child should be required to learn the lesson assigned him by his own unaided efforts. The perseverance in spite of difficulties, and the power to overcome obstacles thus acquired, will make these children successful in their own lives, and prepare them to be a strong wall of defence against any wave which may threaten our national safety.

After all this, however, our work will be a failure if we do not train their consciences to hate a lie and despise a fraud, for the God to whom we owe our greatness as a nation and our blessings as individuals is a God of righteousness, and will not look upon iniquity with any degree of allowance. We must teach the children to make *right* and not *seeming* policy the controlling motive of action; and since the teacher is the "loving epistle, known and read" by them all, in vain will be any attempt to inculcate, by precept, moral principle above that which appears in practice. It is, therefore, of the utmost importance that all teachers be persons of moral integrity, and no less important is it that all workers in the higher ranks be of like character; and that all work done in these schools be based upon truth and honesty, rather than upon political policy or personal advantage. Since, then, our work is to train up a race of men and women having sound bodies, clear judgments, wise heads, and enlightened consciences, we have a model after which to build, and, instead of rushing headlong after one enthusiast to-day and another to-morrow, let us carefully and intelligently direct every effort toward the accomplishment of this aim. Thus, and thus only, may we expect "that our sons may be as plants, grown up in their youth, and that our daughters may be as corner-stones, polished after the similitude of a palace."

CIRCULARS OF INFORMATION

OF THE

BUREAU OF EDUCATION.

No. 2-1882.

PROCEEDINGS OF THE DEPARTMENT OF SUPERINTENDENCE OF
THE NATIONAL EDUCATIONAL ASSOCIATION AT ITS
MEETING AT WASHINGTON, MARCH 21-23, 1882.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.

1882.

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LETTER.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, June 10, 1882.

SIR: I have the honor to present the following papers for publication. The topics are specially pertinent to the present condition of educational discussions. The essays and papers are by some of our most thoughtful and able educators. Appearing in this form they have the advantage of carrying with them the opinions and comments of other experts. Their present publication will greatly relieve demands upon the Office.

I have the honor to be, very respectfully, your obedient servant,

JOHN EATON,
Commissioner.

The Hon. SECRETARY OF THE INTERIOR.

Publication approved.

H. M. TELLER,
Secretary.

NATIONAL EDUCATIONAL ASSOCIATION.

DEPARTMENT OF SUPERINTENDENCE.

MEMBERS IN ATTENDANCE.

SUPERINTENDENTS.

Hon. John W. Akers, State superintendent of public instruction of Iowa, Des Moines.

Hon. H. Clay Armstrong, State superintendent of education of Alabama, Montgomery.

Hon. J. W. Bartch, superintendent of schools, Shenandoah, Pa.

Hon. John M. Bloss, State superintendent of public instruction of Indiana, Indianapolis.

Hon. B. L. Butcher, State superintendent of free schools of West Virginia, Wheeling.

Hon. R. L. Carne, superintendent of schools, Alexandria, Va.

Hon. Geo. F. T. Cook, superintendent of colored schools, Washington, D. C.

Hon. Varnum B. Cochran, State superintendent of public instruction of Michigan, Lansing.

Hon. V. G. Curtis, superintendent of schools, Corry, Pa.

Hon. U. W. Cutts, superintendent of schools, Orange, N. J.

Hon. D. F. De Wolf, State commissioner of common schools of Ohio, Columbus.

Hon. J. W. Dickinson, secretary of State board of education of Massachusetts, Boston.

Hon. John A. Dix, superintendent of schools, Elizabeth, N. J.

Hon. G. T. Fletcher, superintendent of schools, Augusta, Me.

Hon. Aaron Gove, superintendent of schools, Denver, Colo.

Hon. George Howland, superintendent of schools, Chicago, Ill.

Hon. Henry Honck, deputy State superintendent of public instruction of Pennsylvania, Harrisburg.

Hon. H. S. Jones, superintendent of schools, Erie, Pa.

Hon. Wm. A. Lindsey, deputy State superintendent of public instruction of Pennsylvania, Harrisburg.

Hon. A. P. Marble, superintendent of schools, Worcester, Mass.

Hon. M. A. Newell, State superintendent of public instruction of Maryland, Baltimore.

Hon. J. A. Nichols, superintendent of schools, Yonkers, N. Y.

Hon. Birdsey G. Northrop, secretary of State board of education of Connecticut, Hartford.

Hon. Gustavus J. Orr, State school commissioner of Georgia, Atlanta.

Hon. John C. Scarborough, State superintendent of public instruction of North Carolina, Raleigh.

Hon. Wm. H. Shelby, superintendent of schools, York, Pa.

Hon. Henry E. Shepherd, superintendent of schools, Baltimore, Md.

Hon. Thos. B. Stockwell, State commissioner of public schools of Rhode Island, Providence.

Hon. Hugh S. Thompson, State superintendent of education of South Carolina, Columbia.

Prof. F. N. Thorpe, superintendent of schools, North East, Pa.

Hon. J. Ormond Wilson, superintendent of schools for the District of Columbia, Washington.

Hon. Henry A. Wise, assistant superintendent of schools, Baltimore, Md.

Hon. Allen Wright, superintendent of schools of the Choctaw Nation, Indian Territory.

MISCELLANEOUS.

C. W. Bardeen, editor School Bulletin, Syracuse, N. Y.

Dr. Henry Barnard, Hartford, Conn.

Dr. J. S. Billings, Assistant Surgeon General United States Army Washington, D. C.

Jas. H. Blodgett, Rockford, Ill.

Prof. J. P. K. Bryan, Charleston, S. C.

Rev. A. W. Burr, principal of Hallowell Classical Academy, Hallowell, Me.

J. E. Bushnell, New Haven, Conn.

Rev. J. W. Chickering, Washington, D. C.

Adolf Cluss, architect, Washington, D. C.

Dr. Cochran, Staunton, N. J.

Hon. W. A. Courtenay, mayor, Charleston, S. C.

Hon. J. L. M. Curry, LL. D., general agent of the Peabody education fund, Richmond, Va.

Hon. Edward Danforth, Elmira, N. Y.

Hon. J. Dent, commissioner of the District of Columbia, Washington, D. C.

Wm. C. Dodge, esq., member of school board, Washington, D. C.

Rev. S. Domer, Washington, D. C.

Mrs. Sarah B. Earle, Worcester, Mass.

Gen. John Eaton, United States Commissioner of Education, Washington, D. C.

- Prof. J. Enthoffer, Washington, D. C.
William H. Gardiner, esq., Portsmouth, N. H.
Dr. W. W. Godding, Superintendent of the Government Hospital for the Insane, Washington, D. C.
Dr. J. M. Gregory, Urbana, Ill.
Prof. G. Stanley Hall, North Somerville, Mass.
Hon. Dexter A. Hawkins, New York.
Hon. J. W. Hoyt, governor of Wyoming, Cheyenne.
Rev. Sheldon Jackson, D. D., New York.
Geo. T. Littlefield, esq., Boston, Mass.
B. G. Lovejoy, esq., member of the school board, Washington, D. C.
H. G. McCall, Montgomery, Ala.
Rev. A. D. Mayo, D. D., Boston, Mass.
Gen. R. D. Mussey, Washington, D. C.
Prof. C. C. Painter, Fiske University, Nashville, Tenn.
Rev. W. W. Patton, president of Howard University, Washington, D. C.
Hon. J. D. Philbrick, LL. D., Boston, Mass.
Mrs. Louise Pollock, principal of the National Kindergarten, Washington, D. C.
Miss Susie Pollock, Fröbel Institute, Washington, D. C.
Rev. A. T. Porter, D. D., Charleston, S. C.
Rev. J. E. Rankin, D. D., Washington, D. C.
Zalmon Richards, Washington, D. C.
J. W. Schermerhorn, New York.
W. E. Sheldon, editor Primary Teacher, Boston, Mass.
Dr. Charles Smart, United States Army, Washington, D. C.
Hon. J. H. Smart, Indianapolis, Ind.
Justin H. Smith, agent for Scribner & Co., New York.
J. T. Smith, Warwick, R. I.
Lyndon A. Smith, esq., Norwich, Vt.
Prof. H. C. Spencer, principal of the Spencerian Business College, Washington, D. C.
Gen. E. Whittlesey, secretary of Board of Indian Commissioners, Washington, D. C.
J. M. Wilson, Washington, D. C.

PRELIMINARY MEETING — TUESDAY EVENING.

WASHINGTON, *March 21, 1882.*

A preliminary meeting of the members of the Department of Superintendence was held in the red parlor of the Ebbitt House at 8 P. M., for the purpose of perfecting arrangements for the sessions which were to be held on the subsequent days, pursuant to a call issued March 1, 1882.

The president, Hon. W. H. Ruffner, was absent. On motion of Mr. NEWELL, of Maryland, Hon. T. B. Stockwell, State commissioner of schools of Rhode Island, was chosen president pro tempore. The secretary, Hon. H. S. Jones, was in attendance; and an arrangement was made by which the proceedings should be reported and prepared for publication by Mr. J. E. Rockwell, stenographer.

Mr. WILSON offered the following resolution; which was adopted:

Resolved, That an executive committee consisting of three members of this department, whose duty it shall be to arrange and report the programme of papers and business for this meeting, be appointed by the president pro tempore.

The Chair named as this committee Messrs. Wilson, of Washington, Orr, of Georgia, and Howland, of Chicago.

General EATON said that the question of national aid to education now before Congress was, he believed, one which should have the special attention of this association, and, while favoring no particular bill, he hoped that members would do all in their power to bring about some suitable legislation during the present session.

Rev. A. D. MAYO spoke of the necessity of this aid in the South, owing to its impoverished condition. Dr. ORR referred to the need of immediate help in his State (Georgia) because of the vast amount of illiteracy there. Mr. ARMSTRONG, of Alabama, spoke of the amount expended in Alabama for schools (\$410,000) during the last year. The people are anxious to do everything possible, but need help.

Mr. NORTHROP made pertinent remarks on this subject; and was followed by Colonel THOMPSON, of South Carolina, who spoke of the development of the public school system in the State which he represented.

Professor PAINTER, of Nashville, read a memorial which he had prepared regarding national aid; and Mayor COURTENAY, of Charleston, made some statements in regard to the taxes imposed for the support of schools in his city. He concluded by saying that it now took four years to put up a school-house there, and that three more buildings were wanted at once.

On motion of General EATON, the executive committee was instructed "to select a committee on the subject of national aid, to prepare resolutions and present this matter in behalf of this association before the joint meeting of the congressional committees on education and labor."

The subject of national aid was further discussed by Messrs. NORTHROP, FLETCHER, and MAYO; and a motion made by Mr. SHELDON was passed, providing that the committee be requested to consider the distribution of the moneys with a view to determining in what way it may best be done through the existing school officers of each State.

The department then adjourned to meet in the lecture room of the Congregational Church on the following morning.

FIRST SESSION—WEDNESDAY MORNING.

WASHINGTON, *March 22, 1882.*

The meeting was called to order by Mr. STOCKWELL, president pro tempore, and was opened by prayer by Rev. J. E. RANKIN, D. D., of Washington.

Mr. WILSON, from the executive committee, reported the following order of exercises for the morning session :

The information necessary to determine the merits of the heating and ventilation of a school building, by John S. Billings, surgeon, United States Army.

On the chemical examination of air as applied to questions of ventilation, by Captain and Assistant Surgeon Charles Smart, United States Army.

Concerning obstacles in the way of better primary education, by Hon. H. S. Jones, superintendent of schools, Erie, Pa.

City systems, by Hon. John D. Philbrick, LL. D.

Chairs of pedagogy in our institutions for superior instruction, by Prof. G. Stanley Hall, Cambridge, Mass.

The attention of the members of the department was first called to the presentation of the following paper by JOHN S. BILLINGS, surgeon, United States Army :

THE INFORMATION NECESSARY TO DETERMINE THE MERITS OF THE HEATING AND VENTILATION OF A SCHOOL BUILDING.

The question as to the best means of heating and ventilating school buildings is one of great interest, and one which not infrequently comes before me for consideration in the form of an inquiry as to whether the heating and ventilating arrangements of some given building are satisfactory. Unfortunately, when I am questioned about it, it is usually after the fashion in which the soothsayers were questioned about Nebuchadnezzar's dream. You will remember that they were asked not only to furnish an interpretation of the dream, but to describe the dream itself; and in like manner I am often asked for an opinion as to the sufficiency of the ventilation of a building without being furnished with the necessary data upon which alone an intelligent opinion can be based. I must confess that there seems to be no special difficulty in obtaining opinions under such circumstances, as most people seem to be quite ready to answer as to whether a given school, or all the schools of a given place, are well heated and ventilated or otherwise; and I have no doubt that most of those present have views more or less definite as to the

relative value of certain so-called systems of heating and ventilation which they have seen in action. While I do not wish in the smallest degree to express doubts as to the value of these opinions to those holding them, I must say to you that for scientific purposes and for the satisfaction of other people they are unfortunately not of much use. What is wanted for scientific purposes is, not the opinions, but the facts upon which the opinions are based; and the purpose of my remarks is to indicate as briefly and clearly as possible some of the facts which it is most important to ascertain to enable one to judge of the merits of the ventilation of a given place. These facts may be divided into two classes: first, those which may be ascertained by examining the building itself while the school is in operation; and, second, those which cannot be known by a single observation, but only from a series of them; in other words, from records. To the first class belong location, exposure, plan, dimensions, materials, workmanship, air space, air supply, air distribution, number of persons, necessary and unnecessary contaminations, character and sufficiency of heating apparatus; to the second belong records of the results on the health of pupils and teachers, records of temperature, and records of cost.

Let us consider each of these points briefly.

The location and exposure of a school building are of importance in connection with its heating and ventilation, partly in relation to the purity of its air supply and partly because the winds have a much greater effect upon the movements of the air *within* a building than is ordinarily supposed; and this is especially the case in a building constructed of ordinary brick and mortar, with common plastered walls, not painted, papered, or calcimined, which is the case with our ordinary school buildings. In a building of this kind, which is freely exposed to a strong wind, there is a very decided movement of air through the windward side, and a corresponding tendency to an exhaust through the opposite side. This tendency is sometimes so strong that the openings on the leeward side which were intended for inlets of fresh air to the heating surfaces have their action reversed and will be found acting as outlets, in which case it is by no means impossible that what were intended to be the foul-air flues for the building will be found to be acting as inlets, as I have actually seen the case in a school building I examined.

It is necessary that the location and exposure should be distinctly noted, including the altitude of the site, the distance of surrounding buildings, the prevailing winds, &c. The vicinity of marshes, pools of stagnant water, and buildings in which trades and manufactures liable to give forth offensive emanations are situated, should also be noted. The plan of the lot should be given, and upon it should be located the building, giving dimensions, so as to indicate distinctly the amount of ground not covered by the building and the location of drains, sewers, and cesspools outside the building but connected with it. The next

thing is to prepare copies of the floor plans of the building, with a section showing the height of the several stories. It makes little difference how rough these plans may be, provided the dimensions are distinctly indicated upon them, with the location of all doors, windows, heating apparatus, flues, and registers for both fresh and foul air. The dimensions of all windows, doors, and flues should be noted; also the existence of transoms over the doors. The amount of clear opening in the registers for each flue should be indicated, together with the number of desks and the number of children actually in the room at the time of making the observation. The length of time which these children have been in the room since the last recess should also be noted. The temperature of the outer air and that of the room near the floor and near the ceiling, within two feet of the inner wall and in the same position relative to the outer wall, should be taken; also the temperature of the incoming and outgoing air. This is necessary to enable one to judge of the distribution of heat in a room, and to a certain extent is a very good index of the distribution of the fresh air. It is also desirable that the amount of moisture in the air as determined by the hygrometer should be observed and recorded, similar records being taken of the amount of moisture in the external air. The next step is to ascertain the amount of air which is actually entering and leaving the room by the special openings and flues provided for that purpose. This is to be done by means of an instrument called an anemometer, one of which I have on the table before me. This is a delicate and fairly accurate instrument, made by Casella, of London. It will indicate a current of air having so low a velocity as one foot per second, and registers by a series of dials, similar to those on a gas meter, the number of feet of air which have passed through the wheel. The cost of this instrument is about \$25, and I would strongly recommend that in cities where there are several schools the general superintendent, or other inspecting officer, should be provided with one of these instruments and should accustom himself to note the amount of work which the ventilating apparatus in the several buildings are actually performing. In making such observations it will be found that there is a great difference in the amount of air passing through the several flues, dependent on the direction and force of the wind, and also to a great extent as to whether the doors, and the transoms over the doors, of the school rooms be opened or closed. In a school building of several stories, where the doors open into a large central hall containing a staircase, which is a common plan of construction, it will usually be found that a large proportion of the change of the air in the school rooms is effected through the doors and transoms, and outward and inward currents will be found in the doorways near the floors and at the top of the openings.

It would be a great error to suppose that only the amount of fresh air indicated by the anemometer in the flues provided for that purpose is actually entering the room. Were this the case, a great majority of

school rooms would soon become uninhabitable. As a matter of fact, a very large amount of fresh air enters directly through the walls, another part around the windows and through cracks at the junction of the floor and wall, and a third source of supply comes from the central hall, as just indicated.

Although this anemometer is a comparatively simple instrument, there are, nevertheless, one or two precautions necessary in its use, to which it may be well to call attention. In the first place, the accuracy of the instrument should be carefully tested, not only when it is first received, but at intervals subsequently. The reason for this is that the plates of the little windmill are very delicate and easily bent from their proper position, and a very small displacement has a marked effect upon the registration of the instrument. The usual mode of testing these instruments is to swing them in a circle at the extremity of a bar of a known length and note the registration. A simpler method, however, and one by which equal accuracy may be obtained, is to walk rapidly a measured distance, say 200 feet, in a covered space, where there are no currents of air, holding the instrument at arm's-length above the head, or, better, attached to a short rod, with the plane of the wheel perpendicular to the direction of the movement. This mode of carrying the anemometer for this test is necessary, since if the instrument be held in front of the breast, and a foot or two away from it, it will be found that it will register much less than it should do, owing to the obstruction of the free passage of the air through it and the creation of an eddy. It is difficult to ascertain precisely the amount of air flowing through a register by the use of the anemometer, if the instrument be merely held in front of the register. The amount of air passing through the different parts of the register varies, and the irregular ornamental iron-work produces currents and eddies which make it very difficult to obtain a satisfactory average. The best way is to cover the entire register with a sort of truncated cone, made of light board or pasteboard, freely open at both ends, and having the large end fitting close against the wall over the register, the smaller end having, for convenience of calculation, an area of one square foot. This cone should be from one foot to 18 inches high.

I must warn you against the error of supposing that all the air coming from the top of a heating apparatus placed in the room itself and connected with the outer air is to be counted as fresh air supply. In all cases a very considerable amount of this air is derived from the room itself, and rolls up along the side of the heating apparatus, be it ventilating stove, steam coil, or what not, and aids in forming the current which the anemometer shows to exist over the radiator. In all such cases the true amount of air which is entering from without can be found by testing the current with the flue from the external air closed and then open, and noting the difference.

Nor can the amount of air entering at the inlet flues or found to be

passing out of the outlets be taken as an absolute indication of the amount and character of the ventilation of a room, for it is possible to pass a very large amount of air through a room without really ventilating it, and this will always be the case where the air is admitted at a high temperature and allowed to escape through openings at or near the top of the room. It is necessary therefore to obtain some information as to the distribution of the fresh incoming air as well as its quantity. This information is to be obtained partly by the use of visible vapors, or light substances which will indicate the direction and force of the air currents, and partly by chemical analysis.

Of the various means of showing the direction of air currents one of the simplest and easiest of application is by the fumes of freshly generated muriate of ammonia produced by bringing the vapors of the common liquor ammonia of the shops in contact with the vapor of hydrochloric or muriatic acid. These fumes can be inhaled without discomfort or injury; in fact, they are sometimes used for the treatment of chronic inflammatory troubles of the air passages. The cost of their production is very small and they can be generated in any amount desired. Even these, however, give but a very partial idea of the distribution of the air within a room. This can only be ascertained by taking samples of the air at different points in the room and subjecting them to chemical examination. This examination is usually confined to testing the amount of carbonic acid present, and the methods of doing this will be demonstrated before you by Dr. Smart. I wish only to emphasize here the fact that carbonic acid gas in the proportions in which it is found in the worst-ventilated school rooms is not in itself poisonous, offensive, or harmful. The really dangerous and offensive impurities are the organic matters thrown off in respiration, and as these increase the carbonic acid increases in a like proportion. Now, the testing for these organic matters, in a quantitative point of view, is a very difficult and delicate process, whereas the examination for carbonic acid is, as you will see, comparatively simple; hence, the chemical test of the quality of the air is made by the analysis for carbonic acid, which is taken as an index for the really harmful impurities existing. Having obtained these data with regard to air space and air supply, and what may be called the necessary contaminations with which the ventilation system has to deal, that is to say, the number of persons who vitiate the air, the next point to be attended to is what may be termed the unnecessary contaminations of the air, due to defects in the house drainage, to emanations from wet and soiled outer wraps and clothing, to emanations from the soil, and to noxious and infectious gases from the heating apparatus.

If the water closets are placed in the basement of the school building, in a room having a cemented floor, for purposes of cleansing, it is very common to have this floor slightly sloped towards one point and at that point to place an opening into the sewer so that the whole floor and

closets may be washed by means of a hose, and the resulting water readily gotten rid of. This opening to the sewer is usually guarded by means of what is called a bell trap, which is, however, in nine cases out of ten found to be totally ineffective. In two out of three cases in which I have recently examined these arrangements in Washington schools, I found a strong current of air from the sewer passing up from this so-called trap into the basement, from which it passed freely up the staircase into the main hall, and became a part of the source of supply for the school rooms, as I have already explained.

If the closets are placed within the building, it should be noted whether the soil pipe is properly ventilated, that is to say, whether the pipe into which the closets discharge is continued up through the roof and left freely open at the top, and has also a fresh air opening into it from the outside of the building. If the closets be outside of the building the point of discharge of their ventilation pipe should be noted, as to whether it is above or below the level of the windows of the upper rooms in the main school building. A very frequent source of unnecessary contamination of the air supply of a school building is connected with the heating apparatus. This may occur in two ways: first, as the heating apparatus is usually placed in the basement, which communicates freely by stairways with the upper hall, any checking of the draft in the fire causing escape of gases from the furnace into the basement will contaminate its central air supply. This is liable to occur, whatever may be the form of heating apparatus. The second mode of contamination is by the air of the basement, rendered impure in various ways, passing into the fresh air ducts through cracks, leaks, &c. This is especially liable to occur in systems of heating by hot air furnaces, and the fittings of these should be carefully examined.

Into the merits of the various systems of heating employed I do not propose to enter; I merely wish to call attention here to the fact that the great deficiencies in them all are the want of sufficient heating surface and the want of some means of control by which a free supply of air may be permitted to enter without having it all pass over the heating surface. As a rule, in all school buildings warmed by the so-called methods of indirect radiation, that is, by hot-air furnaces or by steam coils placed in the basement, the air enters the room at a comparatively high temperature, too high, in fact, for either comfort or health. The only way of controlling the temperature of the room in the way of reduction is to partially or entirely shut off the air supply by closing the register. No heating or ventilating apparatus which operates in this manner can be considered satisfactory. In all cases it should be possible by the operation of a valve to permit more or less cold air to mingle with the heated air, and this should be done in such a way that the temperature of the air admitted into the room can be regulated without at all diminishing its quantity.

Thus far I have been speaking simply of those matters connected

with a building which can be noted by examination upon a particular day, or, at the most, upon two or three successive days. This, however, will not give a complete idea as to the merits of the system of heating and ventilation of a building. This can only be obtained by a series of records of the effects produced by it under various circumstances of external temperature, moisture, wind, &c., the amount of coal burned, and the effects upon the health of the pupils. Such records are very rarely kept. If they were made the rule, and superintendents and teachers were expected to see that they were regularly and accurately furnished, the effect would be to settle a great many controversies as to the merits of this or that system of heating and ventilation, which controversies at present rest upon opinions merely; and they would also do much to induce the proper authorities to provide satisfactory means of ventilation in the numerous cases in which they are now wanting. Take, for instance, the records of temperature. These should be taken twice in each school session, once just as the school assembles, and again just before it is dismissed. They should be taken in different parts of the room: at the entrance of the fresh air, at the point of discharge of the foul air, at the level of the children's heads, and on the floor. They should be taken, moreover, not from the ordinary cheap thermometers, as purchased in the shops, but from thermometers which have been tested and which are accurate to within at least one degree. It would be still better if these thermometers included both the wet and dry bulb thermometers, so as to obtain the moisture of the air as well as the temperature. The most important record, however, is that which relates to the health of the pupils. It seems at first sight somewhat curious that there should be so little scientific evidence obtainable as to the effects of overcrowded, overheated rooms, and impure air of various kinds upon the health of school children. I have repeatedly found, in going into school rooms, where the air was so impure as to be decidedly offensive to the sense of smell to one entering from the outer air, and where the carbonic acid ranged from twenty to thirty parts in ten thousand, that upon inquiry the children, or at least a great majority of them, made no special complaint of ill-health, nor was it possible to show from their condition, as observed, that the foul air was having a bad effect upon them. This want of evidence is due in part to the great power which the childish organism has of accommodating itself to circumstances, and in part to the fact that the evil effects of impure air are remote rather than immediate, and show themselves at periods from one to perhaps twenty years after the exposure.

It is so highly desirable that a systematic record should be kept of the health of children and teachers and the results which would be obtained from a comparison of such records for a number of school buildings in different cities would be so valuable that it certainly seems worth while to make at least an attempt to obtain them. I am quite aware of the difficulties in the way of making such records complete

and accurate in all respects. Neither the statements of the children nor in many cases of the parents or guardians can be relied upon as to absence on account of sickness, and more especially as to the kind of sickness; nevertheless it does seem possible that when a child is first admitted to a public school a record could be made of its physical condition, including powers of vision and hearing, height, weight, &c., and that thereafter all absence from school on account of alleged sickness should be so noted, as well as the character of the illness, so far as this can be ascertained. In this connection, I would invite your attention to the means used in some investigations undertaken by Prof. Henry P. Bowditch, of Harvard University, respecting the laws of growth in children as shown by investigations made upon school children in Boston.

These data are collected upon cards, of which specimens can be obtained from Professor Bowditch, and of which the following is a copy:

FOR SUCCESSIVE SETS OF OBSERVATIONS—FEMALES.

Record all linear measurements at nearest centimetre; all weights, at nearest kilogram.
Name (or initials), ———; birthplace, ———.

	1882	1883	1884	1885	1886	1887
Age.....y. m..						
Height, without shoes.....cm..						
Sitting height.....cm..						
Finger reach.....cm..						
Chest girth, inspire.....cm..						
Chest girth, expire.....cm..						
Weight (in ordinary indoor clothes).....kilo..						

Nationality of father, —; mother, —; paternal grandfather, —; paternal grandmother, —; maternal grandfather, —; maternal grandmother, —.

Color of eyes, —; color of hair, —.

Occupation (of husband if a married woman) (of parents if a minor), —.

Name (or initials) of observer, —.

Reverse side.

The height is to be taken in an upright position, without shoes, the feet being close to the measuring rod. If, in the case of infants, it is necessary to measure in a recumbent position, the fact should be stated.

The sitting height is the vertical distance between the top of the head and the surface upon which the individual is seated.

The finger reach is the distance between the tips of the middle fingers when the arms are extended horizontally, the breast and arms being in contact with a wall. The chest girth should be taken after a forcible inspiration, and also after a forcible expiration, the measuring tape being passed horizontally round the chest on a level with the nipples, over only a single garment. This measurement is to be taken only on men and children.

The weight is to be taken in ordinary indoor costume. In the case of children less than ten years of age, it is to be recorded at the nearest tenth of a kilogram.

The color of the eyes is to be recorded as blue, gray, brown, or black.

The color of the hair is to be recorded as fair, golden, red, brown, black, or gray. If gray, record also, if possible, the original color.

The nationality is determined by the place of birth.

The occupation should be given so as to indicate as far as possible the degree of comfort in which the individual lives.¹

Separate colored cards are furnished for males and females, and also distinct colors for a single set of observations and for successive sets of observations.

I think it greatly to be desired that, if possible, at this meeting a committee should be appointed to take into consideration this matter of systematically recording the health of children and to suggest forms of records.

I have satisfied myself that such an account could be kept by the teachers with comparatively little trouble and I feel assured that the results would be of great value. In fact, what we need above all things at present, as regards our public school buildings, is a system of accounts which shall show, not only the cost of their construction and repairs, which is merely one side of the question, but their effects upon the health of the children and teachers who are to spend no inconsiderable time in them. That a comparison of such records would lead to changes and improvements in the plans and method of construction of school buildings which would be in the direction of true economy as distinguished from cheapness there can be little doubt.²

The second paper laid before the meeting was read by Dr. CHARLES SMART, United States Army, and was as follows:

THE CHEMICAL EXAMINATION OF AIR AS APPLIED TO QUESTIONS OF VENTILATION.

The atmosphere of the earth has been examined repeatedly by chemists during the past hundred years. Specimens have been submitted to analysis from the city and the country, from the surface of the ocean and from arid plains, from high and low latitudes, from mountain tops, and even from heights reached by ballooning, and the results have always indicated a definite mixture of oxygen and nitrogen gases, with small quantities of accidental matters or so-called impurities which vary with the locality or the conditions affecting it. The oxygen, the active or vivifying agent according to the chemist and physiologist, is simply diluted by its admixture with the nitrogen which has no appreciable effect upon the animal economy. Twenty-one volumes of the former and seventy-nine of the latter form the aerial mixture; and the proportion

¹ See also article on Anthropometrical Methods, Tenth Annual Report of Massachusetts State Board of Health, 1879, p. 55.

² In the city of Oakland, Cal., regular reports of sickness in the public schools are furnished to the health department by the superintendent of schools. Those pupils who are absent from school three or more days consecutively on account of alleged sickness are reported as sick, and some interesting results and warnings are thus obtained. There should, however, be a distinction of sex and age in the reports from the schools in order to permit of comparisons upon these points.

is everywhere preserved, notwithstanding differing specific gravities, by the constant motion produced by cosmical forces, but especially by the power of diffusion or penetration into intermolecular areas which gaseous molecules are known to possess.

Among the so-called accidental matters or impurities, carbonic acid is notable, not only as existing in largest quantity and as being universally present, but as bearing a tolerably constant proportion to the bulk of the main constituents, except in the immediate vicinity of local sources of its production. So constant is its relative figure that even chemists have ceased to regard it as accidental, and have accepted it as forming an essential in the constitution of the atmosphere, which is therefore represented in percentages by oxygen 20.96, carbonic acid .04, and nitrogen 79.00.

The carbonic acid forms .04 per cent. of the volume of the atmosphere, or, in other words, 10,000 volumes of the air contain 4 volumes of the acid. Within limits, however, its quantity is subject to frequent variations. During the air examinations made recently in connection with the report on the condition of the public schools in this city, the external air collected on G street in front of the office of the National Board of Health yielded generally a little over or a little under 4 volumes in 10,000, but on one occasion 4.9 volumes were obtained and on another 2.2 volumes. Two years ago I found similar variations in the air of the Capitol grounds. Several years ago Wetherill, in his report on the ventilation of the House of Representatives, records the external air as unusually free from carbonic acid, from 2 to 3 volumes per 10,000. I examined the air on the Rocky Mountains in the spring of 1874 and found a steady and gradual decrease day by day from 4.5 to 2.6 volumes. Some points have been defined concerning these tides in the carbonic-acid volume, especially by the observations of De Saussure, but practically no one can as yet predicate from one experiment the probabilities as to the next day's results.

Ammonia is another of the accidental substances. It is evolved from nitrogenous organic matter during the putrefactive process, but probably its main source is the inorganic nitrogen of the atmosphere itself, which is combined with ammonia and nitrous and nitric acids by electric agency. Its quantity is variable, but 1 milligram in a cubic metre is a not unusual amount. This is equivalent to a grain in about 23,000 cubic feet. Rain washes the ammonia from the air to the surface of the earth, and in the rainfall it can always be detected and measured. Its quantity is increased during thunder storms. A figure frequently found in analyses is 5 milligrams per litre, which is equivalent to 1 grain in about 34 of our gallons. In dealing with a few cubic feet of air the ammonia is necessarily a very minute quantity, but when the annual rainfall over a tract of country is made the basis of the calculation, it becomes one of interest to the agriculturist.

Watery vapor is constant in its presence in the air, but so varying in its quantity as to be considered by many an accidental constituent.

The laws which govern its presence are known. The dew point can readily be determined by experiment or obtained by calculation from the difference between the dry and wet bulb thermometric readings, and the grains of aqueous vapor which the air contains per cubic foot, or which it would contain if saturated with moisture, can be estimated.

The air is also permeated with organic matter, at least all air near the surface of the earth; but while carbonic acid, water, and ammonia can be detected and measured with the utmost exactitude, little has been determined concerning the chemical constitution of the aerial organic matter. Nevertheless it is certain that of the organic matter of the air a large proportion is not only solid and particulate, but living. Putrescence, which was formerly regarded as a chemical action in which the oxygen of the air was chiefly involved, is now recognized as an incident in the life history of a species of micro-organism. The spores of fungi are also universally diffused and developed wherever are found the favoring conditions as to soil, moisture, and temperature. The microscope and what are known as culture experiments have demonstrated the existence of the aerial organisms and the conditions of their development and growth.

The air constituents which have been mentioned must, from a scientific point of view, be considered as individually essential to the constitution of the atmosphere: the oxygen as being vital to animals, its quantity being preserved by the evolution during vegetable growth and the equilibrium between the two kingdoms of nature; the nitrogen as being an inorganic supply, which is susceptible of advance to organization and life by the electric production of ammonia and the assimilation of that ammoniacal nitrogen by vegetable organisms; the carbonic acid as vital to vegetation, its quantity being preserved by the evolution from animal life and the retrogression of the carbon of dead organic matter during putrefaction; the ammonia as needful to the building up of organic tissues by vegetable life, which organic tissues when overtaken by death are returned to the ammoniacal condition by the action of the atmospheric micro-organisms; lastly, the watery vapor, without which desiccation would bring to an end the whole of these life actions in which the atmosphere participates.

This is the normal constitution of the atmosphere, and the object of ventilation is to furnish our houses, school rooms, and other artificial shelters with an air for respiratory purposes which shall not differ materially from this standard. Other gases and organic matters are sometimes present in certain specimens of air, but they are truly accidental, are circumscribed in their extent, and depend for their existence on local causes or conditions. The exhalations from the human lungs and skin which give the close, heavy odor to the air of an unventilated school room have been captured and put into the retort and test tube, but the methods of dealing with them hitherto adopted have failed to give satisfactory information even as to their physical constitution. Are

they gases, liquids, or solids of ultra-microscopic size dissolved in or borne upon the cloud of watery vapor ! The field is here open for investigation, but it is unlikely that much will be accomplished until the progress of science offers some new method, instrument, or reagent by which the subtle emanations may be examined. During dry seasons the air may be loaded with dust, which is a generic term including everything, organic or inorganic, light enough to be swept up by the air movements. From the imperfect combustion of coal the deleterious carbonic oxide may be evolved. Ground air may be drawn into ventilating currents and impair their usefulness by its excess of carbonic acid, while, if the soil is polluted, miasmatic influences may accompany the gaseous acid and undermine the health of the consumers. The unknown constituents of the sewer emanations, the exhalations which are connected with vegetable decomposition, and which are spoken of generically as malaria, and possibly the specific poisons of typhoid fever, cholera, and other diseases may sometimes infect the atmosphere. But these, although their study is fraught with important issues to the public, do not enter into the question of ventilation except in so far as concerns their absence from the ventilating supply.

When air of the normal constitution above described has been used for life purposes by a number of individuals in a closed room, its carbonic acid, aqueous vapor, organic matter, and ammonia are increased and its oxygen materially diminished. Any of these changes might be taken as the index of the change from normal quality in the air and hence as the index of ventilation. A tedious filtration is involved in the separation of the organic matter and an accurate method of estimating it has not as yet been developed. The aqueous vapor can be readily determined, but its quantity is liable to be increased by evaporating surfaces unconnected with deterioration of the air. Recently Dr. Angus Smith has been studying the condensation of the ammonia on glass plates as a ready method of testing the quality of the air, but although the ammonia, when collected, can be estimated with the utmost precision, the method of collection is faulty. Of late I have been filtering known volumes of air through Austrian glass wool, chiefly for the separation of organic matter, but incidentally for the condensation of the ammonia upon the fibres. The results are seemingly more affected by the hygrometric condition of the air than by the absolute amount of the ammonia present in it. The quantity of ammonia which adheres to the glass is neither the whole nor a definite fraction of the whole, but more or less, according to certain atmospheric conditions.

Satisfactory results can be obtained by determining the percentage of oxygen in the air ; but the simplest and best method of ascertaining its deterioration by the action of respiration consists of an estimation of the quantity of carbonic acid present in a given volume of the air. Not that the carbonic acid is the special poison thrown out from the lungs during respiration — the organic exhalations are probably the most

active of the deleterious products—but the increase in the amount of the carbonic acid over that naturally present in the external air is a measure of the respiratory use to which the air has been applied and of its fitness or unfitness for further use. Carbonic acid, when in considerable amount, is believed to produce evil effects upon the system, but the languor and oppression, the headache and flushings, which result from deficient ventilation, are consequent rather on the deficiency of oxygen in the air, together with its organic foulness.

The carbonic acid is fixed and estimated by its affinity for the caustic earths lime or baryta, with either of which it forms an insoluble carbonate. The alkalinity of the caustic solution is known; the carbonic acid removes or neutralizes a portion of that alkalinity, and the loss is the measure of the carbonic acid which has effected the neutralization. The process originated with Pettenkofer. Its practical details are readily understood.

A solution of pure oxalic acid is made containing 2.864 grams per litre of distilled water. This strength is such that 1 gram or 1 cubic centimetre will neutralize as much caustic baryta as would combine with 1 milligram of carbonic acid. A baryta solution is then made which will correspond in strength to the acid solution, 1 cubic centimetre of the one neutralizing 1 cubic centimetre of the other. Practically they may not be of exactly equivalent strength, but the relationship they bear to each other must be ascertained and borne in mind during the subsequent calculations. The baryta solution is poured into a number of clean and dry two-ounce vials, which are corked securely and weighed. The total weight (bottle and contents) is marked upon the label of each bottle.

When a carbonic acid determination is to be made, the air is collected in a large, clean, and dry bottle or narrow-mouthed jar, the capacity of which is accurately known. The bottles which were used in the recent examinations contained about ten litres each. If the jar, as is not unfrequently the case, has a temperature different from that of the room from which the sample is to be taken, it must be permitted to stand for a few minutes until the difference has disappeared. A rubber tube connected with the nozzle of a bellows is then dropped into the jar, which is filled with the air to be examined, taking care that the air entering by the valve of the bellows is not contaminated by any direct respiratory streams from individuals around. The operator, of course, knows the capacity of the bellows and the number of strokes necessary to insure the change of air in the bottle. As soon as this is accomplished, one of the prepared baryta vials is carefully uncorked and its contents poured into the jar, which is then closed by an accurately ground stopper or tightly fitting rubber cork. The baryta solution is then shaken in the jar and made to flow all over the interior to promote its contact with the contained air. Generally a whitish turbidity or milkiness is developed during the shaking, but, to insure the thorough absorption

of the carbonic acid, it is customary to let the jar stand until next day before proceeding further with the investigation.

In the mean time the volume of air operated on is calculated from observations taken at the time the air was secured. The levels of the barometer and dry and wet bulb thermometers must be known and the quantity of baryta solution introduced into the jar. The last is obtained by reweighing the now empty vial. Its loss in weight gives the quantity in grams of the baryta solution employed, and this number, as cubic centimetres, has to be deducted from the known capacity of the jar. It is necessary, however, to express this air volume in the space which it would occupy when dry at zero Centigrade and under an atmospheric pressure of 760 millimetres of mercury, that the results of different experiments may be susceptible of comparison. Increased temperature expands the volume of a gas and increased pressure diminishes it, while the pressure of the watery vapor present must be taken into account. It is needless to particularize in these matters. The temperature observations will give the dewpoint, through which can be obtained from the observations of Regnault and others the pressure or tension of the aqueous vapor. If P represent this pressure, T the observed temperature in Centigrade degrees, B the barometric height in millimetres, and V the capacity of the jar minus the cubic centimetres of baryta solution introduced, the corrected volume will be equal to:

$$\frac{V (B - P) 273}{(273 + T) 760}$$

Next day the liquid contents of the jar are transferred to a small beaked flask, known as Schuster's alkalimeter, and the weight of the flask and its contents are noted, that the loss of weight may indicate the quantity used in the subsequent experiment. A small beaker has had weighed into it 10 grams of the oxalic acid solution—1 gram or 1 cubic centimetre of which is equivalent to 1 milligram of carbonic acid—and the acid solution has been colored red by the addition of a tincture of litmus. Into this the deteriorated baryta solution is dropped from the alkalimeter rapidly, until a haziness pervades the liquid, and then slowly, until one drop changes the color to a dark purple. The acid has been neutralized and the loss of weight suffered by the alkalimeter gives the quantity of the baryta solution used in effecting the neutralization. Let it be supposed, for example, that 60 grams of the solution were introduced into the jar, and that 30 grams of it are now required to neutralize the 10 grams of oxalic liquid; the total of 60 grams will be sufficient to neutralize only 20 grams of the test acid, while before exposure to the carbonic acid of the bottled air it was capable of combining with 60 grams. There has therefore been removed from its solution by the carbonic acid as much baryta as would neutralize 40 grams of the oxalic solution, i. e., 40 milligrams of carbonic acid were contained in the air operated on.

The experimental response to the question How much carbonic acid

in the corrected volume of air? is given in weight, but the relation of weight to volume is known. One milligram of carbonic acid occupies a little more than one-half of a cubic centimetre at zero Centigrade and under 760 millimetres of pressure. Multiplication by the factor .50685 will transform weight into volume, and a simple calculation will give the volumes of carbonic acid per 10,000 of the air examined. It must be remembered, however, that this volume of carbonic acid is not due to respiratory action, but includes that which is naturally present in the air. When the result of a contemporaneous experiment on the external air has been deducted, the remainder indicates the carbonic *impurity* of the air or that due wholly to the respiratory function.

The chemistry of the investigation ends here and gives place to calculations; but, before concluding by a reference to these, it may be well to illustrate two simple methods of approximating to the amount of carbonic acid. They are known as the "household" and "minimetric" methods.

The former is based upon the fact that when lime water is shaken up with air a certain amount of the precipitated carbonate must be diffused in the water before the eye can recognize the presence of the turbidity. The larger the percentage of carbonic acid in the air the smaller will be the volume of that air needful to cause a visible haziness. A stock of lime water is prepared by shaking up slacked lime with distilled water, permitting it to settle, and siphoning off the clear liquid for use; and a series of bottles are procured, ranging in capacity from 2 to 20 ounces in which to make the experiments. The following table expresses the relation between the size of the bottle and the volumes of carbonic acid in the air according as a turbidity does or does not occur when half an ounce of the lime water is used.

If the number of volumes of carbonic acid in the air is smaller than in the last column of the table, the effect of adding the lime water will be to leave the mixture clear; if larger, the mixture will be turbid.

Size of bottle in fluid ounces.	Carbonic acid in volumes per 10,000 air.
20.6	3
15.6	4
12.5	5
10.5	6
9.1	7
8.0	8
7.2	9
6.5	10
6.0	11
5.5	12
5.1	13
4.8	14
4.5	15
3.5	20
2.9	25
2.5	30
2.0	40

If an 8 ounce bottle shows turbidity, the presence of more than 8 volumes is indicated; how much more, must be determined by a second experiment. Taking a $6\frac{1}{2}$ ounce bottle, the air is known to contain less than 10 volumes if no precipitate is developed. The carbonic acid can therefore be stated as constituting from 8 to 10 volumes per 10,000 of the air. But a third experiment with a bottle intermediate in size will correspondingly reduce the limits of uncertainty regarding the carbonic acid figure.

In the minimetric process half an ounce of baryta solution is introduced into a bottle the capacity of which is known (70 ounces in the present instance) and which is charged with the external air. This, when shaken, becomes turbid, and its turbidity is used as a standard in subsequent experiments. For purposes of comparison this standard solution is transferred to a $2\frac{1}{2}$ ounce bottle, similar in shape and color of glass to that in which the minimetric experiment is to be conducted, and the two ounces of external air which it contains are to be added to the capacity of the larger bottle, making in this case 72 ounces.

Half an ounce of baryta water is poured into a $2\frac{1}{2}$ ounce bottle which has been filled with the air to be examined. This is attached to an aspirator, or to what answers the purpose as well and is readily extemporized, a large bottle with a siphon and rubber connections. The baryta is shaken up with the air in the small bottle, and a second charge of two ounces introduced by withdrawing that volume of water by the siphon from the larger one. This is also shaken up, and, if no precipitate occurs, air is added as before by siphoning off water until a turbidity appears which matches the standard obtained from the external air. The same quantity of carbonic acid has been thrown down in both instances and the quantity of air employed in each case is known, so that the relation which the carbonic figure of the examined air bears to that of the atmosphere at large can easily be ascertained. If the external air which contributed this precipitate measured 72 ounces and the air which was passed through the test bottle 36 ounces, the latter sample would be recorded as containing two volumes of carbonic acid for one existing in the former, or 8 volumes per 10,000, on the assumption that the external air contained its average of 4 volumes.

Accuracy is not to be expected from these methods, but they are useful to indicate whether the air of a room is overcharged with respiratory products. We have simply to shake up the charge of lime water in an 8 ounce vial to know by the turbidity that the air is not as it should be.

Having found the carbonic impurity, or the total carbonic acid minus that existing in the external air, in the specimen under examination, we may inquire into the information which it furnishes regarding the ventilation of a school room or other apartment. What is the rate of inflow a minute which is indicated by the amount of carbonic impurity? To ascertain this it is needful to know the average rate at which carbonic

acid is eliminated from the person. This evolution varies according to conditions of rest or activity. Professor Parkes states the yield at from 12 to 16 cubic feet in 24 hours, or from .5 to .66 cubic foot per hour. Huxley gives 360 cubic feet as the volume of air expired daily, and as the air of expiration is known to contain 4 per cent. of carbonic acid, this is equivalent to an hourly production of .6 cubic foot. Other experimenters have arrived at similar results. I am not aware that any special investigation has been made into the evolution from children under school-room conditions, but in their absence .6 cubic foot may be accepted as a close approximation to the truth. This is a convenient number, as it corresponds with .01 cubic foot a minute. The capacity of the room must be ascertained and in exact calculations deduction should be made for the body bulk of the occupants and for the furniture. The time during which the deterioration has been going on is another factor which enters into the calculation.

The carbonic evolution .01 cubic foot per minute per person, multiplied by the number of minutes, gives the amount of the carbonic impurity generated. When this is divided by the carbonic impurity found by experiment in 10,000 volumes of air, the quotient multiplied by 10,000 will express in cubic feet the volume of air with which the respiratory products have been diluted. But as the air volume in the room has contributed to the dilution, its capacity has to be deducted from the total to obtain the amount of the inflow.

Thus, if the data consist of 50 persons, 50 minutes, 9,000 cubic feet, and a carbonic impurity experimentally found of 5 volumes:

$$.01 \times 50 \times 50 = 25.00 \text{ cubic feet of carbonic acid expired.}$$

$$\frac{25}{5} \times 10,000 = 50,000 \text{ cubic feet of air required for the dilution.}$$

$$50,000 - 9,000 = 41,000 \text{ cubic feet of inflow.}$$

$$\frac{41000}{50} = 820 \text{ inflow per minute in cubic feet.}$$

The inflow per minute being known, other questions which need only be suggested may be answered. An experiment has been made on the air of a room which contains only thirty pupils, but is seated for fifty; what would the result have been had all the seats been occupied? The session has lasted but 40 minutes at the time of the experiment; how would it have resulted if made at the end of two hours?—and so on.

In practice it is often found that the inflow as determined by the anemometer is much greater than that obtained from the chemical results. That the air enters is certain, and that it fails to be utilized in diluting the expired air appears equally so. A want of diffusion must be inferred in explanation. A notable example of this was recently found in one of the rooms in the Franklin school, where 800 cubic feet per minute certainly entered, while but 324 feet contributed to the ventilation. The cause in this instance was manifest. The temperature of the incoming air was so great that it rose immediately to the ceiling, whence

it was drawn off by the lowered windows and foul air flues. To determine the existence of currents which interfere with a general diffusion, the room may be filled with vapor of chloride of ammonium. Liquid ammonia is poured over pieces of thick blotting paper lying upon a shallow plate, and over them, by way of a flue, is placed a wide cylinder of the same absorbent paper moistened with hydrochloric acid. The fumes rise quickly, filling the room and indicating the course and character of its air movement.

At the conclusion of this paper Mr. WILSON offered the following resolution, which was unanimously adopted:

Resolved, That the Committee on Appropriations of the House of Representatives be requested to furnish this department, for publication with its proceedings, a copy of the report of Dr. J. S. Billings, vice president of the National Board of Health; Edward Clark, Architect of the Capitol; and Hon. John Eaton, Commissioner of Education, recently appointed by the House of Representatives to examine and make a report upon the condition of the public school buildings of the District of Columbia, and to make suggestions in relation thereto. (See appendix, page 107.)

The next paper was presented by Hon. H. S. JONES, PH. D., superintendent of schools at Erie, Pa., and secretary of the department of superintendence:

OBSTACLES IN THE WAY OF BETTER PRIMARY EDUCATION.

Whoever would attempt to show that, during the majestic march of our country through the last half century, the education of the people had kept step with the other enterprises forming important factors in the building up of a great nation, would find failure easy and success extremely difficult, while he who would venture to prove that education was hardly progressive, was indeed a laggard twenty-five to fifty years behind the wants of the time, would find an abundance of material with which to make out his case.

It is purposed to discuss, in unvarnished phrase, some of the common obstacles in the way of better primary education.

The term obstacles, as applied to educational hindrances, is used in its radical sense, representing difficulties that are serious and as firmly established as the malaria of the Pontine marshes or the large families of consonants in the Welsh language.

The expression primary education in this paper has reference to the ordinary district school and the town school below the high school.

Chief of the obstacles to which your attention is called is:

I.—A WEAK EDUCATIONAL APPETITE.

A strong appetite for education does not consist in mere capacity or desire for learning, but in an impelling, conquering force that enables one not only to acquire knowledge by the aid of what are called advantages, but drives him to seek it and find it under discouragement and frequent defeat, and, more, to assimilate it, make it individual.

It is found in every character of prominence: Franklin, Clay, Greeley, Lincoln, Edison, Garfield. It exists independent of the school, though the school may right nobly assist in its development, or, unhappily, destructively enfeeble its possibilities.

Let us try to form an estimate of the public educational appetite. Will the people endure as much, save as much, think as much for education as they did years ago? Is not the sentiment vigorous and growing, that education should come rapidly, easily, and cost little? Is the demand for educational bequests and endowments growing less? Do not the leading, wealthy institutions of our country stand hat in hand like mendicants?

Suppose those young people in our higher institutions of learning who have no financial worry about the morrow were called upon to pay the actual cost of their instruction, what would be the result? The verdict would be that superior education is too expensive even for the wealthy, a luxury to be shunned. What sentiment does the limited and irregular attendance of our free schools reflect? The thousands that attend them are very, very young, and like unripe fruit they drop off the school tree before their time. While parents value a little assistance or a few pennies earned by their offspring more than they do the benefits of school, the children, looking through parental eyes, soon lose taste for study and willingly drop out and join the vast army of the undisciplined, which ranks scarcely above the illiterate.

The tramp element is a social fungus marked "hard times" by labor reformers, but "no appetite for thought" would more surely hit the nail on the head.

As intimated, the school may have a part in causing the natural, intellectual appetite to become dyspeptic. The schools have suffered considerably from mental dyspepsia, caused by the unpalatable, uncooked, uncarved food of the old-time methods and the thin soup and pedagogical hash of the latter day saints. I would be the last to decry what are termed improved methods, but when they seek to be superlative in complexity or follow unhesitatingly even a great mind through all its windings, vagaries, and hasty conclusions, I would cry "Hold! Let us take counsel together, lest we lose that which we have and gain nothing."

The no-methods of the older days seem to be ingrained with stupid neglect, while those of the present, that attract and fascinate, are emphatic in coddling kindness and tend to keep the child childish.

If a boy has an honest, upbuilding appetite, it matters little, as to his growth, whether he eats with fork, knife, spoon, or fingers.

II.—ANY RESPECTABLE ANYBODY CAN TEACH, AND HIRING THE CHEAPEST ANYBODY IS ECONOMY.

This sentiment is as common and as tenacious of life as grass. It has been known to go into a decline and seem ready for burial, when, as

if by magic, its youth and strength are renewed and it takes an active part in forwarding civilization! Sometimes it is exceedingly timid, but a little persuasion of the right sort will coax it to the front, where it will lead and control public opinion. Following the last panic, it manifested the energy and vertebra of a General Jackson, sweeping broad sections of our fair land with the besom of "educational reform."

Not many years ago, in a city of considerable size and promise, the president of the school board, who was called "Judge" and had served his constituents in their municipal chambers and in the State legislature, said, in an address to the body over which he presided, that the salaries had risen far above the sentiment of the community, that the law of supply and demand should govern in hiring teachers, and he was convinced from the large number of applicants and the personal solicitations of their friends that the schools could be filled by persons who would be satisfied with ten dollars a month!

Like an untimely frost, this crisp political economy maxim, coming from so respectable and honorable a source, nipped in the bud a feeble effort to make poor schools better. "Supply and demand" has forced into many a school the husks and chaff of the crowd that stand eager for any place at any salary.

A prominent business man forcibly remarked that the school boards of the country were extravagant in salaries; 25 to 50 per cent. could be saved by giving out the schools to the lowest bidders. That would be business, and if the schools lacked in anything, it was in business methods.

The friends of improved education have founded normal schools—only a fraction of the number needed—and can we look for a proper increase of these institutions so long as the normal school has only a precarious hold on the public?

Their students and graduates have found that they must compete with the army of anybodies, and that only here and there have they been shown favor on account of their professional training. A prominent normal school principal recently stated that his experience was that the better teachers were prepared the shorter would be their term of service, other callings offering a greater premium to the energetic and disciplined.

Cities have crowned their systems with normal departments and left the teacher-graduate to take her chance with the non-professional applicant.

Is it surprising that the normal school has no professional breadth? that it is a mere academy surrounded by a sort of pedagogic halo?

Mr. Bland says, "Give us the best teachers—professional teachers." But when importuned to use his influence in favor of Miss Goody Unfortunate of tender years, or Widow Oldtime, or Embryo Blackstone, the horizon of his judgment widens and he obeys the call to be "influ-

ential." The Bland family is large, active, and sympathetic, hence popular, for it serves the good people with alacrity!

Experience is but faintly recognized, and it is easy to find towns, like a wealthy city in the Empire State, that virtually say, "We pay just as much for blundering experiments as for solid, finished work!" This plan is a blessing to the experimenters, for through it the "good die early" and their places have to be filled!

Cities, villages, and rural districts take pride in showing the taxpayers how much less it costs them per scholar for teachers' wages than it does many other less economical communities. School authorities are never called to account by their constituents when the expense per capita for instruction shows that economy has been made equivalent to hiring the cheapest anybody.

The terms used by Adams in speaking of superintendents, in his "New Departure" pamphlet, reflect this sentiment: "The ordinary superintendent is a grammar school teacher gone to seed," "some retired clergyman or local politician out of a job!" "That this should be so is certainly most singular!"

Not a few laws pertaining to the county superintendency have been so framed as to make the highway to that office as broad and as easily travelled as that which leads to the heights held by the town constable!

This obstacle finds support in the orthodox method of examining teachers. Applicants are usually examined as if they were still mere school children, so that a bright boy or a bright girl of self possession and ready memory may go up to the examination and win a high grade certificate, while a person of mature judgment and skill as a teacher may fail to reach a fair standard. In looking over "model questions" published in books and educational journals, it will be found that but a few refer to the business of teaching. A set recently published contains but three that would cause one to suspect that they were for teachers:

- (1) "What is the best method of ventilation?"
- (2) "What is the principal object of education?"
- (3) "How do you regulate whispering?"

III.—IGNORANT OFFICIAL INTERFERENCE.

This may be beaming with enthusiastic good-nature and worthy intention supported by an amount of school information large enough to give edge to self confidence, or it may glow with that fierce destructive hatred which would destroy an institution rather than allow it to exist with apparent defects.

The childlike confidence with which some school officials handle educational affairs is equal to that shown by the pet of the family when he puts his tiny finger into the candle and succeeds in learning a lesson and in creating a disturbance.

Mr. Spellbound (ex-champion speller) tells the new and hopeful teacher

that the school can't spell. "Spellin' is what they want! no new-fangled ways; have 'em stand up and spell. When I went to school I learned to spell; you may have heard of it." The campaign opens with a daily battle of words; "spellin'" becomes a hobby and the best speller wears the crown.

Spellbound is followed by 'Squire Root, who observes to the happy teacher that she is running spelling "into the ground." "Rithmetic is what they want; Shakespeare couldn't spell his own name. Suppose you ask 'em this simple question, and see 'em get stuck: What's the square root of sixty-four?"

John Hancock would bring penmanship to the front, so that a page of a pupil's manuscript would be rich in shading and flourishing, but poor in legibility.

Director Crabb in his "remarks" to the school lays down the test of discipline. "The scholars don't sit still. When I taught school you could hear a pin drop. You must have order; a school without order is a failure."

Patrick Henry urges upon the teacher the importance of speaking and exhibitions. "The future governor of the State may be under your instruction, or possibly the coming President of this great nation; see that they are trained to address their fellow citizens."

The teacher labors on under an increasing pressure of direction and advice, following each voice in turn, until in a state of bewilderment she loses her individuality and wanders without purpose through the term and rejoices when "the last day comes" and all is over.

A few years ago a director seeking a teacher called at my office; he was referred to a normal school. The advice was not at all acceptable. "We don't want any normal school nonsense. We tried one of 'em. Everything was new-fangled. Scholars didn't stand up and spell, and they were told to help themselves, and he actually refused to show some of 'em when they got *stuck*. Didn't have such foolin' when I went to school. He wouldn't listen to my suggestions, so we put him out."

Sometimes official interference is highly respectable, as is well illustrated in the story of the "New Departure at Quincy," in the words of Mr. Adams: "During the examinations the schools were taken wholly out of the hands of the teachers. The result was deplorable; the schools went to pieces. The committee were busy men, not specialists in education. Committees elected by popular vote are entirely unequal to any sustained effort."

The "Queen City" of the world in liberality in school affairs, is almost distracted over the primary school question. The hydra-committee, well informed, proud spirited, but irresponsible, have in a great measure ignored the experience and wisdom of their best teachers, and made them and their pupils instruments for forced experiments.

Surely this historic town spends money enough on her schools to place the methods of work in education in the hands of educators.

IV.—THE FREQUENT CHANGE IN EDUCATIONAL WORKERS.

The average rural school experiences a change of administration each term, and in towns and cities the mobility of teachers is not a little surprising. A superintendent of a pleasant city employing about seventy teachers finds that the teacher's life averages less than three years, and he urges the school board to organize a training department, in order that less of this brief service may be given up to experiment.

Another city, remarkable for its respect for "tenure of office" in teacher and superintendent, has but thirty of the present force of over a hundred who were in the schools six years ago.

A county superintendent was doing a noble work—elevating the standard of the schools—when a voice like one "crying in the wilderness" was heard: "He's getting too exacting in examinations!" "It's time for a change!" "No third term!" Election day came and went, and he was called to the common fate of his kind, to step down and enjoy the quiet of defeat.

I have in mind an experienced schoolman, a sort of educational Luther in his county, but I fear that at the next election the guillotine of popular opinion in favor of rotation in office will be applied to this "right man in the right place."

The experience of school boards is usually limited and narrow. Capable men, willing to go on and serve the public, must step aside for the inexperienced and possibly the utterly incompetent.

The picture grows no brighter when taken from the heights of State supervision. The tenure of office is too short to possess even the quality of sweetness. The chief officer can hardly do more than take a hasty survey of matters, make out a report or two, draw his meagre salary, and retire.

V.—FORSAKING THE COUNTRY SCHOOL FOR THE TOWN SCHOOL.

The statement openly and emphatically made, that the old time district school was better than its successor of to-day, is not so wild as it sounds. In many cases, the school of years ago, with its large number, its spelling matches, its debating society, the intellectual centre of a neighborhood, has dwindled to a state of feebleness unpleasant to contemplate. The well-to-do boys and girls seek the town school, leaving the home school to the very young and the poorer children, to be presided over by a youthful member of the large Micawber family.

Few young men of force and ambition now make the district school a stepping-stone to a broader and more exacting life. They find better support in their struggle to rise in other directions. It is doubtful whether it will be said of the Garfields of the next generation that on their way upward they honored and blessed the common school as instructors.

The superintendent of a great and ambitious State laments the weakness of the district school, and recommends consolidation; and in com-

plimentary terms infers that, as the people have accepted professional cheese and butter makers, they will soon be wise enough to call into their rural schools none but professional educators. It is evident, in this case, that cheese has the start of the children.

VI.—SELF SATISFACTION.

This assumes several forms, running from self glorification to stolid indifference. The majority voice too often says "Our schools are as good as any" or "They are the best."

Rarely do school boards visit other schools than their own or send their teachers to study the workings of other systems. The material affairs of municipalities suffer less. Fire departments, systems of sewage, water supply, and paving are placed in comparison founded on actual observations made by committees aided by experts.

VII.—BRICK AND MORTAR.

This is not widespread, but it is contagious. General Garfield, in his last address to this body, said that soon the "great case" in education would be Brains *vs.* Brick and Mortar.

The tendency to estimate a school by a brick and mortar standard is certainly increasing.

It is applied alike to the "university" and the school of the pretensions village. In many instances, the people are so loaded with debt caused by showy and expensive school architecture that when their children cry for mental food they get in response cut stone instead of educational bread. A child in a palace in charge of a brainless teacher is poor indeed!

With a simple introduction, I present the following as "big children" of the obstacles discussed:

(1) That mechanical drill is education, information swallowing, learning; (2) that a mental quart cup can hold a gallon; (3) sensitiveness of teachers to criticism (thin-skinned? why, some wear their nerves as an outer garment!); (4) lack of educational ideas among the people; (5) social lines, "blood and bullion;" (6) that the masses know what they want (*vox populi*, &c.); (7) that the school is to cure all weakness, remedy defects, and insure a money-making life.

These obstacles are of the people. Educators are not the people. Only a small fraction have enlisted for the war; the rank and file are "home guards." It has been often said that educators are fighting the great army of the king of ignorance; but it is seldom noticed that the supplies are mostly in the hands of the enemy! What would the world say had England attacked the Zulus with this battle-cry, "Feed us and we will conquer you"?

The educator who has turned his back upon the money-making world, whose pluck, patience, faith, and force increase with his years, is the missionary of missionaries. The missionary when called is assured of

a decent support while active and the tender care of the sheltering arms of the church when retired, and in addition the prayers of the faithful and the promise of "exceeding great reward" in the world to come. But the educator is offered a precarious living when "up and doing," and nothing when time or cruel fortune shall cry "Halt!" no half-pay, no pension, nothing but a fund of fond memories, his own feeble prayers, and only that hope of a heavenly reward held out to ordinary mortals!

The paper on "City systems," read by Dr. JOHN D. PHILBRICK, has not been furnished for publication.

Mr. WILSON, from the executive committee, announced the committee to bring the subject of national aid to education before Congress as follows: J. W. Dickinson, secretary State board of education, Massachusetts, chairman; H. Clay Armstrong, State superintendent of education, Alabama; Aaron Gove, superintendent of schools, Denver, Colo.; B. G. Northrop, secretary of the State board of education, Connecticut; Gustavus J. Orr, State school commissioner, Georgia; George Howland, superintendent of schools, Chicago, Ill.; James H. Smart, Indiana; J. W. Akers, State superintendent of public instruction, Iowa; G. T. Fletcher, superintendent of schools, Augusta, Me.; M. A. Newell, State superintendent of public instruction, Maryland; V. B. Cochran, State superintendent of public instruction, Michigan; William H. Gardiner, New Hampshire; J. A. Dix, superintendent of schools, Elizabeth, N. J.; Dexter A. Hawkins, New York; John C. Scarborough, State superintendent of public instruction, North Carolina; Daniel F. De Wolf, State commissioner of common schools, Ohio; H. S. Jones, superintendent of schools, Erie, Pa.; Thomas B. Stockwell, State commissioner of common schools, Rhode Island; Hugh S. Thompson, State superintendent of education, South Carolina; C. C. Painter, Fisk University, Nashville, Tenn.; Lyndon A. Smith, Vermont; J. L. M. Curry, general agent of the Peabody Fund, Richmond, Va.; B. L. Butcher, State superintendent of free schools, West Virginia; B. G. Lovejoy, member school board, Washington, District of Columbia; Allen Wright, superintendent of schools, Choctaw Nation, Indian Territory; J. W. Hoyt, governor of Wyoming Territory.

The morning session was concluded by the presentation of the following paper by G. STANLEY HALL, PH. D., lecturer on pedagogy at Harvard University:

CHAIRS OF PEDAGOGY IN OUR HIGHER INSTITUTIONS OF LEARNING.

LADIES AND GENTLEMEN: You have all heard of the notable chapter in a modern work entitled *Snakes in Ireland*, which reads simply "There are no snakes in Ireland." If the author of that chapter had frankly added that he had never been in Ireland and was not even a naturalist, his case would have been still more like my own; for I regret that I must begin the discussion of the subject which has been assigned

me in a hardly less inauspicious way, as, first, there are no chairs of pedagogy in our higher institutions of learning, or but two, I think; and, secondly, the present speaker's studies have been so centred on the practical psychology of teaching and learning that he can only plead the pressing importance of the subject for presenting a few considerations, some of which have not had time to become quite matured.

Perhaps the first thing urged by those who advocate such chairs is the German precedent. During the semester which has just ended between 40 and 50 courses of lectures on pedagogy have been given in the various German universities. A few of these are but two hours a week; a few are confined to the pedagogy of special sciences and designed for future professors in these departments. Sometimes a disciple of Hegel, like the late Professor Rosenkranz, of Königsberg, or of Herbart, like Strümpel, in Leipzig, or a positivist, like Laas, of Strasburg, loves to vary the attractions of his philosophy by lecturing from once to four times a week on some pedagogic theme. A high church, low church, or a Catholic theological professor chooses this subject sometimes to indoctrinate future teachers and through them the rising generation in what he considers sound theories of education. Thus it comes to pass that many of the voluminous treatises on pedagogy which emanate from professorial chairs in Germany, while having much in common, differ often in detail and often still more radically in first principles respecting the ultimate ends, objects, and spirit of education. Thus it comes that most of the religious, philosophic, and scientific tendencies have not only found their expression, but have their disciples among teachers of the public schools. This not only tends to prevent stagnation, a great and constant danger in education, but (neglecting the polemics, rarely tedious or bitter) each standpoint has contributed something new and valuable; and vast as is the body of pedagogic literature in that country, the human mind is still vaster. Very few professors who have lectured on pedagogy there have made it their central interest from first to last, and it is often an incidental if not a second class course. Of the three or so who have made pedagogy their their exclusive specialty, perhaps the most active is a disciple of Herbart, who edits a year book, visits schools with his pupils, studies children and methods, especially of primary grades, has published two valuable books, lectures constantly in the university, and has treated with great detail and authority several of the elementary branches. Most of the pedagogical literature of that country is written by teachers of various grades, and is of every degree of merit and interest. Perhaps a score of the more comprehensive treatises are very valuable, full of suggestion and stimulus, while over much of these writings, it must be confessed, the very spirit invoked in the Dunciad has woven a resistless spell; to read it is like sifting a bushel of chaffy, philosophic words for two grains of wheat.

In several of the universities of Great Britain, individuals able and

interested in the subject have been invited to give single courses of lectures on some special aspect of pedagogy for which they were best qualified, and one or two permanent professorships have been established. In France and Italy university lectures have also been given, but I know of no department yet established on a permanent basis.

In matters of education, however, we must not be guided too much by foreign precedent, although we have very much to learn from Germany. We have our own peculiar problems, which we must solve in our own peculiar and independent way. There is a pregnant sense in which the American school from bottom to top, from Kindergarten to university, is and must be unique. Here every one who does not send his child to school (which he should do for the same reason as he pays his taxes or fights in time of war) must be regarded in a peculiarly insidious sense an enemy of the state. A republic like ours should be especially an educational state. The life of a republic, it has been well said, is a struggle for existence against ignorance and the evils which troop in its train, and the question whether such a form of government as ours can be permanent is at bottom a question of education, because a self government demands a so much higher degree of knowledge and virtue among its people than any other form of government. 'Because our great outstanding problems can be solved only gradually, and by no other means than general education, school laws should be a most important branch of legislation by the state. And the matter of popular education should be one important care and interest close to the heart of all higher institutions of learning aided by the state, if not also of all those whose property is exempted from taxation by it. The former should have a peculiarly public function and interest in education. If there be any help in chairs of pedagogy, or even any reasonable prospect of help in them, the need of it is great and increasing enough to warrant the experiment. Moreover, a university is historically and preëminently a teacher of teachers in the broadest sense, as indeed the very degree "doctor" implies, and not in any sense a finishing or industrial school of any sort. This function is one which I am sure the American college cannot afford to lose sight of behind the narrower question, so liable to eclipse it in these days of hot college competition and rivalry, "Will it be of immediate and material help to us?" School boards, it is said, have great and too often almost sole initiative power, but a very rapidly increasing number of the members of these board are graduates. And if (which, so far as I could judge from nearly five years' university experience there, is quite the custom in Germany) most students, not scientific, were to hear one course of pedagogy, they would be much better fitted for the duties of that position.

Again, original investigation has a rapidly increasing value in college economics, and, as I believe, the prospects for new advances in this direction are now more pressing than ever before. Many colleges, again, are now surrounding the central work of their courses with a more or less

broad and defined penumbra of electives both hard and soft, of lectures and incidental courses of various kinds, somewhere among which a mild experiment of pedagogy might be attempted by the most cautious trustees without committing the institution irrevocably to it. If we had the

dmirable docent system of Germany, by which any young man who could pass the required examinations, which are special, hard, and long, could try his luck at lecturing in any university where he could attract students, provided only that he could live without salary, being paid by student fees alone, there is reason to think that this question like many others would settle itself by a slow and sure process of natural selection.

Perhaps the strongest objection to the establishment of such chairs, if not that most often heard or made by teachers, is that teaching cannot be taught, that it is not a science, that there is no philosophy of teaching. Sometimes it is said that, at least in the higher branches, knowledge of the subject is all that is needed; or again that every teacher must have his own method, peculiar to himself, if not learned by his own experience; or, again, that pedagogy is like agriculture, dentistry, or business, each of which may be taught in colleges by itself, but the matter of which is only a new combination of what is already taught in chemistry, botany, physiology, political economy, &c., but that there is no domain or body of fact and truth peculiarly and exclusively appertaining to it alone, as there must be to a true science. Its material, it is said, is partly drawn from general knowledge of human nature, and partly, like acoustics for the musician, from an extraneous science, and of questionable practical applicability, or perhaps the adverse inference is based on the well-known disagreement of the best writers on education. This line of argument, though far less emphasized now than formerly, still requires our serious attention. There is a strong pressure upon the universities to found new chairs, just as there is upon the schools to introduce new studies, and it must be borne in mind that lectures and text books cannot be equally valuable upon all subjects, but that deep channels of experience and fruitful mines of wisdom have opened only in a very few directions. Is there then breadth, depth, and richness enough of scientific soil for our most useful plant to strike its own deep root, and not flourish with a parasitic life?

It will be perhaps a convenient way of answering this important question if we hastily sketch the qualifications of and inventory the matter to be treated by an ideal teacher of pedagogy—an *ideal*, observe, which is perhaps nowhere fully realized, perhaps is not yet realizable, but respecting the nature of which there is now, I think, no great diversity of opinion.

First, then, he should be a more or less experienced teacher. He must be schooled even in the petty difficulties constantly encountered in the school-room and have developed tact to overcome them. He must have felt how prone we are in teaching, where it is hard to evolve

wisdom and right temper at call, to be handicapped by carking cares which make us welcome and trust too much in petty expedients. He must be profoundly and constantly sensible of the wide and ruinous chasm so liable to yawn between theory and practice, and never allow himself, as not a few pedagogues have done, to get out of sympathy with practical teachers nor allow them to get out of sympathy with him; for until teachers all have a systematic course of pedagogy behind them before entering their profession, all the best of them will be his hearers if he lectures accessibly to them, his readers if he writes, or perhaps his pupils for a term in his regular academic work. He must no doubt sometimes criticise and trouble them, and they him; must, perhaps, sometimes be more feared than favored; must resist the clamor for *only* what is immediately practical next day in school; must know just how far to go toward minute details and how much to leave to individuality, tact, and circumstances. When teachers become mechanical or cliquish, and countenance each other's errors, neglects, or deficiencies by a too intense esprit de corps, his position and his disposition should be so independent that he may see and point out plainly the evils sure to result, but all in a spirit so fraternal as to avoid all species of friction so far as in him lies, which as a rule is just so much force lost from the proper work of instruction.

Secondly, he should have seen and studied with great care and detail many schools of different grades and of many kinds, if possible in many lands, critically comparing methods and results, and have seen that in teaching there is not generally one single and only way of salvation, but that there are often several equally good methods of compassing the same thing. To get in a rut—a tendency in teaching as constant and strong as the law of gravity or organic decay—is bad, but to believe it the great and only highway of the world is worse yet, while it is often a great advantage to modulate from one method over into another no better. But, furthermore, a knowledge of the best results of others' experience is sure to be choicely culled in this comparative way, which will make it less needful for the young teacher to waste the precious energies and time of the children in getting his trade in the dearest of all the dear schools of experience. This observation should extend, it is needless to say, to all the items of light, ventilation, seats, plan of school-house, educational laws, appropriations, supervision, as well as books and teaching apparatus of all sorts, culminating, however, in the detailed methods of teaching the particular branches and exploring all the lines of least resistance into the pupils' minds.

Thirdly, and more specifically, there is the history of education, a vast mine of information and ready made and thoroughly distilled experience, the most immediate use of which is, perhaps, after all, negative, viz, to prevent us from trying again educational experiments already made over and over again. The history of education, especially in Germany, is an old and well-worked laboratory of such experiments, almost

no record of which exists as yet in our language. Almost every conceivable device in teaching, almost every relation to state and church, all species of legislative enactments, every trick and device of illustration, have been tried and recorded in the large letters of actual experience. Furthermore, we know how the historic sense, once well developed in a department, finds precious knowledge lived away in the strangest places and how everything reveals educational aspects. Historic interest here is a new sense, revealing a new order of things almost unsuspected before. Indeed it is scarcely too much to say that the pedagogic standpoint is perhaps in the broadest sense the very best, highest, and most prospective for reading history in general.

Now the three matters already specified are surely in the main peculiar to the field of pedagogy, of great interest and importance to teachers, and might perhaps occupy half the course or less, treated either separately or all together. No one of these, however, is exactly central, but the prime and indispensable requisite and core of a science of education is a knowledge of the human mind deeper and more scientific than that furnished by ordinary intercourse with men, individual experience, or self knowledge, and not capricious and accidental like that. This has been so often reiterated by almost every authority in education since Pestalozzi's *Book for Mothers*, or indeed since Comenius' *Orbis*, that it is only stating our question in different terms to ask if there is any real and true philosophy of mind solid and certain enough to be made the basis of the most important of modern institutions, except at least the church. Two or three decades ago, or even less, this would have seemed to the impartial and competent observer a preposterous claim and does even yet in many quarters. Compare, as I have tried to do, the methods, ends, and order of education as indicated by the pietist Palmer, the Hegelian Rosenkranz, the Herbartian Ziller, the Schellingian Fröbel, or compare the common Hamiltonian, or Scotch, notion of the mind and its activities with that of Spencer, Whately, Stricker, Wundt, and the rest, or the latter among themselves, and it is disheartening to observe the often fundamental disagreement. So far and so long as philosophy was divided into sects or schools, teachers were quite right in their dread of being entangled in systems which were sure to make them, as Schopenhauer declares all are who think in systems, blind to all that opposes and lynx-eyed to all that favors them. But with the gradual decay of the system of absolute idealism in Germany, from which all English and American philosophy except the theories of association and evolution sprung, a new state of things slowly supervened. A broader sanity caused thinkers to cease to be ashamed or afraid or unable to be intelligible; and, to make a long story short, a feeling of solidarity and consensus has arisen among students of mind, each considering the other as an ally, cordially recognizing what he has done, and each content to contribute his item to a vast whole and not yearning with the ambition of construing the universe from his own in-

dividual vantage ground, the fruitful source of error and conflict. It is this movement which, in the language of Waitz, has saved philosophy. It is this which, as Lotze says, is so fast destroying the prejudices and false presuppositions which have so long preoccupied the field of both mental and educational science; and it is this which has made the present a day of philosophical renaissance in which more general interest and hopefulness centre about this field than ever before in this country. The Baconian method has just begun last of all to transform the methods of mental study, and the old systems of the heroic age of German speculation already seem like the pale landscape backgrounds of some of Raphael's canvases; not valueless nor all unlike landscapes in nature, but as conventionalized in their methods of representing the human mind as is the twining ivy as represented in the scroll-work upon an illuminated missal. Now this direction of philosophic study, none the less philosophical because sometimes resented by scientific men, culminates in education. The senses, memory, attention, the will, the psychic development of children, &c., much of which is of immediate practical utility, are made the subjects of a more careful and fruitful study than ever before. These mines are, to be sure, newly opened. Much of the material is widely scattered and must be laboriously gathered from sources as diverse as metaphysical journals, physiological, neurological, pathological archives, and there is much dross, but the new red gold is there and can be had for the sifting. Here lies the heart of pedagogy, as in the centre of a great but only peripherally explored continent. In this exploration the ideal professor of pedagogy should and easily could do original work by studying the faculties of children, active, passive, and at rest, and the various phases of their growth by inductive methods already suggested and fruitful, a more detailed exposition of which the writer hopes shortly to present. A cross section, as it were, of the adult mind is not what is wanted, yet such are most of the current treatises on mental philosophy. It is the fundamental law of mental development, as well of action and assimilation, that must be made the basis of methods of teaching, topics chosen, and their order. Almost no truth may not be as disastrous as a lie, if taught too early or late or wrongly, and almost no error may not be made salutary if all these are in its favor.

In this most central position, then, a firm corner-stone is now laid for scientific pedagogy. It is true that psychology begins in tact and sympathy, but it ends in anthropology, one of the richest and broadest fields of research known. It is true that genius is born, not made, in pedagogy as elsewhere; but it is also true that anxious study of the material upon which they work is needed, as well as a whole repertory of instruments and methods, for those who would work upon mind or upon the brain, the most complex of all the tissues woven in the loom of time. It is often true that a little pedagogy is a dangerous thing, but so is a little knowledge of every art or profession, while deep down below our

successes or failures as teachers lie certain causative psychological principles, to know which would be to control them. As the great educational problems, most of which have been only provisionally settled, open broader and deeper one after another, as they do in times of educational awakening, what shall be included in our curricula and what time shall be given to each; what is the educational and practical value of each; how shall school work be unified, so that mere contiguity shall not be mistaken for real logical affinity, so that we may secure, at least to a degree, harmonious development in these days of accident and casually competing specialties—these and many such wider problems can ripen to full maturity only in an atmosphere charged with philosophic insight and the accumulated experience of the centuries. The effects of these studies upon the teacher are not often remarked by the casual observer, but they increase his inner life; he loves to grow mentally as well as to foster growth; slowly and silently they increase his potency and his earnestness, lift him above petty expedients and reliance on short cuts and patent methods, and perhaps best of all, secure a professional spirit.

Fifthly, and in a sense more fundamental, are the bearings of ethics on education. There has been much freshened activity in this field, of which I have left myself no time to speak here. The notions of duty and freedom have been deepened and cleared up in a way at least prophetic of new advances. This is likely to have a very practical bearing in the new movement (one of the most interesting at present in the whole field of education) to introduce moral training of some sort into the schools as a public need. As all the practical questions of intellectual education centre in psychology, so most of the wider and deeper problems of character, the relation between morality and mental culture, the relation of the school to state, church, home, and all the ethical goods or values which make life fit to be lived—these centre in ethics, which is fast becoming a necessity for the practical teacher.

Each of these five tendencies, especially the last three, is at present far more cultivated and further developed in Germany than in this country. This needs to be boldly and distinctly said, despite the suspicion of want of patriotism, Teutonic affectation, &c., so liable to arise. There is in that country a great body of comparatively recent educational literature of a very high order, only a very small part of which is to be found in the alcoves of any library in this country. Indeed, I am almost ready to say that for one I see no greater and more imperative need in our educational field at present, except southern aid, than one or more exhaustive educational libraries, and perhaps museums, and a few men who have the will and the ability and are secured the leisure to work it up and over, slowly and carefully, critically adapting it to the needs and bringing it to the knowledge of our best teachers and those who intend to teach, as a few professors of pedagogy could do if their chairs stood upon a proper basis. Their function should be in part a public one. Great

as is now the mechanical, material, organic perfection of our schools, greater probably, averaging large sections, than in any other part of the world, we still need a better study of methods than our normal schools are yet prepared to give or their pupils to receive, while graduates from colleges who wish to fit for superior teachers have no training suited to them. The great danger of superintendents, supervisors, &c., is that they will be absorbed by the business, managerial functions, and neglect giving their chief attention to the central and most essential studies which alone can make their work professional.

Chairs of pedagogy ought to help the institutions which establish them, especially in the department of mental philosophy, now often so poorly taught in colleges that it must be justly held in part responsible for our backwardness in applying mental laws to education. It is not improbable that the establishment of such chairs might be felt in other departments of college teaching, in stimulating increased interest in methods of instruction.

But we have dwelt too long upon snakes in Ireland, upon our ideal pedagogist, who does not yet exist. It is time to remember that there are practical difficulties to be overcome of a somewhat serious nature. First, where are the men to fill these chairs? Some of our college presidents and trustees, it is to be hoped and believed, have already taken up the lantern of Diogenes, and are sincerely searching for men, but are of course not unmindful of the fact that unwise, incompetent men might do harm, while only fairly good men might distil mediocrity and dignify commonplaces. But there is the same trouble in other departments, and especially in every new one, while young men are appointed every day more for their promises than their performances. The colleges could give opportunity and stimulus, while youth and enthusiasm could be safely trusted to soon do the rest. Appointment to a college chair is, ought to be, only the beginning of a life of research and growth, and so far as our colleges are serious in encouraging original work might they not, for the same academic reason, encourage fresh studies in such new and promising fields?

The objections that such chairs would interfere in any way with the work of normal schools and that there is no demand for higher training than they are giving and the lack of funds for new professorships so commonly pleaded were briefly considered and the speaker concluded as follows: If teaching is to become a profession it is superintendents and supervisors, &c., who must first make it so, by becoming, as their high position demands, strictly professional themselves in their work. It is they who have most interest in making education a science and teaching a profession. It is movement in this direction that is to establish the system of superintendency in those many communities where the question respecting its utility has now been opened. It is they whose urgency and perhaps petition and agitation might perhaps be instrumental in establishing such chairs in some needed places. The very existence of

a large body of superintendents like this, upon whose shoulders rests a vast and increasing though all too often unrecognized power—not so far less than that of yonder august legislative bodies, to the far historic ken, in shaping the America of a generation hence—this body, its needful dignity and power, its practical needs, constitute the strongest and most urgent argument in favor of professional pedagogy.

The Department then adjourned to meet in the same hall at 8 P. M.

SECOND SESSION—WEDNESDAY EVENING. .

WASHINGTON, *March 22, 1882.*

The second session of the Department was held at 8 P. M. After calling the meeting to order, Mr. STOCKWELL, the president pro tempore, stated that the evening would be devoted solely to a discussion of the subject of national aid to education, and introduced Rev. A. D. MAYO, who spoke without notes as follows :

MR. PRESIDENT AND GENTLEMEN OF THE CONVENTION : It is a great comfort when speaking upon any such matter as we have in hand to feel that you are talking to people who need no preliminary, who understand all the fundamental arguments for education, and who are thoroughly competent to supply themselves with all the rhetoric and eloquence which it may be necessary to display on such an occasion.

I suppose you have asked me to speak to you to-night, not because I am a teacher, for I am not a teacher, but because during the past two years, engaged in what I may be permitted to call a ministry of education through the Southern States, I have had some rather unusual opportunities for observation in that part of the country. I shall return your compliment by speaking to you in the plainest manner, giving a plain, unvarnished tale, indicating to you some conclusions which have been forcing themselves upon my mind in connection with this most important subject.

The first impression which has been made upon me in this matter is that the great need of the Southern States to-day is a system of elementary education ; and when I speak of a system of elementary education I do not refer to the old-fashioned district or city school, a clumsy machine for teaching the three R's, but I mean our modern idea of elementary education, the new elementary education, the school that takes the child from the age of five or six to twelve or fourteen and carries him through a proper elementary education which fits him to go forth at that time armed with the powers of citizenship ; and this new elementary education, as we see it now all over our country, bears about the same relation to the old-fashioned elementary education that the limited express train on which our brother Hawkins came to-day from New York bears to the old family chariot in which George Washington jolted to New York to take his oath as President of the United States.

It is this new elementary education, with the training of teachers com-

petent to enforce it, which is the great and crying want of our Southern States to-day.

Now, as I look over the South, I see that there are three classes of people, and each of them in a special way is to be benefited by this kind of education. First comes the great mass of the children of the freedmen, and elementary education in their case means to them a great deal more than it can mean for an average white child in this country, because the negro is the latest comer into society. Every white man has a thousand years of race culture behind him; the negro has at best but two hundred and fifty, and therefore elementary education for the children of the freedmen means, first, the formation of the educational mind, the building of the foundations on which instruction can be reared in the average colored child. It means education in a thousand things which in a well regulated community the teacher is hardly supposed to meddle with: education in manners, morals, and everything that goes to make up the fundamentals of our ordinary American life; and this work I consider the most difficult, the most arduous to be done of any work of teaching that is now going on.

Then we come to another class, the children of the ignorant white people in the South; and yet we shall make a great mistake if we think these unlettered people are a stupid people. They are chiefly of English-Scotch or Scotch-Irish extraction. Out of that class have come many of the ablest men in southern life. They have been educated by an experience in life which is remarkable and which has done great things for them, and these children are perhaps as well prepared for taking the elementary education in its beautiful new methods as any children that ever walked on the face of the earth.

Then comes the class of children which must awaken the compassion of every one who knows of them, the great multitude of children of those who twenty years ago were among the most wealthy people in the South, now reduced to utter poverty, so that unless some aid were extended to them multitudes would grow up in absolute ignorance.

Now there are these three classes, the freedmen, the children of the ignorant whites, and the destitute children of the old cultured class; and they all need this foundation of elementary education; and the people who have charge of the academic education and the collegiate education are coming fast to see that this education is their only safety. There are as many of these institutions now as the South ought to have for the next fifty years, and for lack of this elementary education these academies are compelled to do mere primary school work, mere grammar school work, by taking children at fourteen or fifteen who are in about the condition that children should be at ten or twelve. Right along with this comes the training of a body of teachers competent to do this work, and the material is all at hand through the southern country. The girl that was born the year that the war closed is to-day a young lady of seventeen. Since the close of the war a whole generation

of these boys and girls has come up in the South ; and especially is it true that the South is full of the daughters of powerful families who are longing for the education which shall enable them to go forth and become the teachers, not only of the white but of the colored people.

Now I need not say that there are peculiar obstacles to doing this good work. One great obstacle is the amount of ignorance ; another obstacle is one we do not appreciate ; it is that nine-tenths of the people of the South never saw what we call a good public elementary school, such as can be seen to-day in Charleston, and it is owing largely to this fact that there is so much holding back among the people when you speak of public graded schools.

Then come other obstacles. One is the indisposition to taxation.

Then we must remember that the war in the South left society cut up. It has left a great heritage of bitterness between this people, so that it is very difficult for the people to get together and work together, forgetting each his own crotchets and his own notions.

Then there are physical obstacles and the sparse population of the great country. Then there is the race obstacle ; and then there is this, the crowning difficulty : the difficulty of getting hold of enough money to do anything in any part of our southern country.

The school public, the free public school public, that I meet in all the Southern States, composed of superintendents, of teachers—this school public is one of the most forcible, most enlightened, and most determined body of people that ever got on foot in the United States of America. It may not be the majority of the people, but it is composed of that material that makes a majority if you only give it a good chance. Now, this school public, in such a spirit of self sacrifice as I never witnessed anywhere else, is trying to plant this system all over the South, and I could spend the whole evening in telling you the most affecting stories of labor performed, of the noblest people giving their time and their life like water to do this thing. Now, this public is trying to do this thing, and the great difficulty just now is the lack of money to do it. The great majority of the people believe in this elementary education by the State. The school public is a very enlightened and determined one, and they take all they can get from the people and do the best they can. But these school authorities have just enough money to make a school that is satisfactory to nobody in the town. The roof is on fire with the blaze of ignorance, and this people have a ladder that reaches about up to the second story window, and they are expected to go and put out the fire ; and there is the trouble : just money enough to inaugurate a public school system, break down the old system of academical instruction, and not enough to give anything that is a substitute such as the leading class, on whom the schools must depend for success, will support.

Now, this is the great thing : we need, we want national aid in order to enable the school authorities all through the South at once to put the

thing before the people, to show it to the people who never saw a first class public school, to show it in a way that will conquer opposition, that will persuade the people themselves to take up the work and never let it die. I have seen some of the most interesting cases in which the establishment of a school of this kind has completely satisfied a public that has been fighting against it for years.

If you can only give those friends the money to put before the people a real public school as an object lesson, the battle is won, and if you can do that for five or ten years, as this national aid proposes to do, the work will be done, so that at the end of that time every Southern State can be left to have its own system of education as thoroughly as any State in the East or the West.

Now, friends, how do we want that aid? In the first place, we want it now. This matter is urgent. Don't you see that if you let a generation of these children grow up, it is going to be all the harder to deal with this question; and don't you see that every child that you catch now you not only send that child out a better citizen, man or woman, but you send that child out determined that his child shall be better educated than himself?

Another thing is that we want money *enough* at once. What you want is something decisive which will enable the school authorities to plant a good school and let the people see it one year.

There is no more miserable economy than to be stinting your appropriation for a good work.

It seems to me that if for ten years a generous appropriation could be given to our Southern States the work could be done. You only aggravate the evil if you fail to do this. So let us have the work done now, and let us have enough to do it in a generous and effective way.

Let us give this money to the southern children and youth through the regular channels.

Any such thing as putting into these States a supplementary supervisor of schools, with a salary of \$3,000 or \$5,000 a year, I believe would defeat about all the good effects of the distribution through these States, for this man would be a bigger man than the State official. I don't care if two brothers were appointed, they would inevitably get into quarrels in trying to do this work. Two good men are too many to do any one good thing. Then, again, the expense would be from one to two hundred thousand dollars a year, as much as the Peabody fund has to-day, to put into every State of this Union a new Government officer. Then, too, we must remember that anybody that desires money from Uncle Sam must work for it. The Congress of the United States only does what it is compelled to do by the voice of the people. Let us go home and wake up the people in every State to demand that our servants at the Capitol shall give out of the present abundance of the nation's treasure house money enough, and at once, under fit safeguard and

supervision, to stem this flowing tide of ignorance and help our brethren in the South in their present heroic effort to help themselves.

A presentation of the subject of national aid from a northern standpoint was then given in the following address by DEXTER A. HAWKINS, A. M., of Newark, N. J. :

NATIONAL AID TO STATE COMMON SCHOOL EDUCATION.

I am requested to present the views upon this point generally held in the Northern or old free school States.

It might be supposed that the States that have from the beginning established and supported chiefly by public taxation a system of free public schools sufficient for all the children within their borders would be opposed to national aid to common school education. But this is not the fact. They look upon the people of each and all the States as fellow-citizens and brethren. They consider them all individually as members of one family. They look upon the whole country as one body of which the respective States and the citizens of each State are members.

In the natural body, whenever any one member is weakened, diseased, or disabled, the whole body suffers. Every other member necessarily loses some of its force and vitality and vigor. If one leg is gone, the other leg has double duty to perform, and it cannot enable the body to accomplish as much as though both legs were sound. If one foot or even one toe is diseased, it has a similar effect, and the whole body is either wholly or partially unfit for service. The same is true in the political body. If one State is weakened and its vigor and powers emasculated through the illiteracy of a great body of its inhabitants, that affects not only the nation as a whole, but every other State in the Union, and the people of every other State.

The underproduction of an illiterate State, the inability of its people to meet their individual debts, and of the State to meet its State debt (resulting from this underproduction of its citizens), cause annually loss to the citizens of every other State and injury to the credit of every other State and to the good name of the community.

The old free public school States are careful students of history. They look to the past for guides in the future. They find that in all ages and in all civilized countries the governing class has been, is, and must of necessity be an educated class; else the government cannot be either good or permanent. The very inherent nature of man and of government makes this principle constant and universal.

In this country the governing class is the entire body of the people; hence the education of the entire body of the people is an essential means of securing good and permanent government.

Education to be universal must be secured and enforced by laws that reach every individual. It cannot be left to minor authorities or organizations.

In the Republic of Sparta, twenty-eight hundred years ago, these principles were understood by Lycurgus, and the child of every citizen was educated at public expense and required to be so educated. In Athens, under the laws of Solon, five hundred years before the Christian era, the children of all the citizens were educated and required to be educated.

These two little free states ruled and controlled the whole of Greece; and Greece for five hundred years ruled and controlled the shores of the whole Mediterranean. It was not her physical force that did this, but the power of her intelligence. At the siege of Syracuse the Greek mathematician brought down to his aid the fires of heaven, and by concentrating the rays of the sun upon the enemies' machines of war burned them. The old Grecian republics to-day, through their literature, are one of the great powers in civilization and free government, though they ceased to exist as independent nations nearly two thousand years ago. Their philosophers, their poets, their historians, and their orators still instruct and delight us.

In the eighth century the great Christian Emperor Charlemagne required the children of all persons participating in the government to be educated, in order that intelligence might rule his empire. The power of intelligence thus developed, held and controlled by him, enabled him to unite and consolidate the whole of Western Europe.

In 1530 Martin Luther, at Geneva, made education obligatory upon all, and to-day the twenty-two cantons of the Swiss Republic, by more than a two-thirds vote, enjoy the beneficent influence of that law of Luther. In 1560 the Duchy of Orleans, by act of assembly, made education compulsory, and parents were bound under heavy penalties to send their children to school. In 1571 the states of Navarre made education obligatory upon all. In 1649 Württemberg made attendance at school compulsory, and punished non-compliance with fine and imprisonment.

The chief claim that the great Austrian Empress Maria Theresa has to immortality in history is that, more than a hundred years ago, she established public schools for the education of the children of her empire and required them to attend.

In 1773 Saxony made education compulsory upon all to the extent of ten years' schooling. In 1804 the attendance was secured by heavy fines and penalties, and to-day, we are informed, there is not a child of the school age in the whole of Saxony that has not attended school.

In 1795, as soon as the first French Republic was organized, education was made secular, universal, and compulsory. On the return of that country to monarchy, this was abolished. The present French Republic has established universal education and made it compulsory; hence the great prosperity of France, after losing, ten years ago, a thousand million dollars in gold and two provinces, with nearly two millions of her people. If they stick to universal education, their re-

public will endure; if they give it up, the republic will go under, as a monarchy of some kind is the only fit government for an ignorant people, and the more ignorant, the more despotic it must be.

In 1807, when Napoleon the Great had stripped Prussia of her territory, her wealth, and her power, and reduced her to a mere impoverished province, William von Humboldt, the brother of Alexander von Humboldt and minister of public instruction, presented to the King a scheme for the establishment of universal compulsory education, and assured him that through the education of its people Prussia would recover from her misfortunes and obtain and maintain a leading and controlling position in Europe. The King adopted the scheme, and Prussia ten years ago vindicated the wisdom and foresight of Humboldt.

As a race, the Hebrews especially excel in the education of their children. An illiterate Hebrew it is difficult to find anywhere. Hence the wealth, prosperity, and influence of that small people; and hence their oppression and expulsion from the country by the ignorant semi-barbaric Slavic races of Southern Russia.

Between two and three thousand years ago Confucius and Mencius established schools throughout China, and education in the Flowery Kingdom became universal. For centuries, under rigorous civil service regulations, none but the educated have been permitted to hold office under government or participate in it, until to-day an illiterate Chinaman is scarcely ever to be met. As a consequence, they have maintained a regular, orderly government for several thousand years, they support more people to the square mile than any other nation, and maintain a population equal to more than one-third of that of the entire globe. They seldom engage in foreign wars or interfere in the affairs of other nations. On this point Washington might have learned the wisdom of his farewell address from them.

When the early settlers came from England to this continent, two hundred and sixty years ago, they intended to establish here a free government, "a government of the people, for the people, and by the people," to use the perfect words of the immortal Lincoln, and as an essential condition precedent to the continuance of such a government they immediately established the public school.

In New England and the rest of the Northern States the school kept pace with the children, the intention being that no child should be allowed to grow up without ample opportunity to obtain a good common English education. Common school education is the key to the sobriety, industry, tenacity of purpose, and prosperity of the inhabitants of the Northern States. In 1642 the Colony of Massachusetts Bay not only established free common schools, but made education compulsory upon all children. Five years after, 1647, severe penalties were provided in case parents did not send their children to school.

In 1650 the Colony of Connecticut followed the example of her elder

sister, and not only established the schools, but made education compulsory upon all, until now it is extremely difficult for a native-born child to grow up in those two States without an education. The school officer ferrets him out and compels him to attend school unless he is being educated at home. What is the consequence? The people of Massachusetts and Connecticut excel in intelligence, in accumulated wealth, and in annual production, notwithstanding their barren soil and cold climate, those of any other States. Their few illiterates are mostly foreigners. The first six hundred immigrants that landed in Massachusetts contained thirty graduates of Cambridge University, England; and the intelligence of those thirty gentlemen, from the day they landed on the bleak shores of Massachusetts Bay until the present time, has continued to shed blessings upon the inhabitants of the Old Bay State. The people in the North believe in education; they believe in it everywhere, and on all occasions, and for all people. They are not only ready to educate themselves, but they are ready to help educate every child in the country who cannot obtain an education without their aid.

We in the old common school States believe in free government and universal suffrage. We believe the ballot is essential to the protection of individual rights.

When the four millions of negro slaves were delivered from bondage, the North insisted on giving them the ballot, in order that they might peaceably protect themselves. It was either the ballot or the bullet; and so low is the standard of political morals in this country that whatever class is not endowed with the ballot will have to submit to imposition, brutality, or expatriation unless it protects itself with the bullet.

The free school States, having endowed the four millions of ex-slaves with the ballot for self protection, are now, for the safety of the Republic, under the necessity of securing in some way to these ignorant voters, and to the half million of illiterate white voters in the South, an education sufficient to enable them intelligently to participate in and maintain in the Southern States a republican government. With ignorant voters, there or anywhere else, a free democratic republic is simply an impossibility. The illiterate vote must and will in some way be neutralized.

Napoleon's theory was that democracy with ignorant voters, in order to escape the ruin to society resulting from the rule of ignorance, necessarily and inevitably ended in some sort of despotism, usually military despotism; and all history shows that he was correct.

The Northern States being fully and firmly committed to free government, are hence fully and firmly committed to universal education as the only means of sustaining and perpetuating the blessings of free government. A few years ago the illiteracy of nearly one-half of the voters in one part of the country almost precipitated upon us a second civil war. It was avoided only by the patriotism and forbearance of the leaders of the two great political parties of the country. The free

school States do not wish to have free government run such a risk again. Unless we educate the voter, a similar crisis may recur every four years. The South came out of the war thoroughly impoverished; yet it to-day taxes itself more heavily, according to its property, for public education than does the North. But the money thus generously raised is wholly inadequate. If left to their own private resources it will take them a century to reach the safe point for free government; hence the old free school States are thoroughly alive and in earnest in favor of national aid to public education and its distribution according to illiteracy until the several States shall be able to get along without it. We precipitated four millions of ignorant citizens upon the cotton States; we feel that we owe it to ourselves and to them to help them in educating this mass of ignorance and fitting these four millions of people for the rational enjoyment of the legal rights with which we have insisted upon endowing them.

Slavery impoverished the South; it helped to enrich the North; for we enjoyed the advantages, if there were any, flowing from it, without the curses. The South now experiences the curses of its former condition, to wit, an illiterate and improvident population, without any of the advantages. Hence, common honesty, common safety, as well as common humanity and patriotism, call upon the North to advocate temporary national aid to public education, and the distribution of the money according to the number of illiterates in each State.

Since the year 1865 the people of the free school States have, by individual contributions, sent over a million dollars a year to their brethren at the South to aid education. It took years to stimulate the desire for knowledge among the ignorant and inert masses, and to get them, as a body, in condition to receive educational aid on a large scale to advantage. They are now hungering and thirsting for schools, and ask us from the national abundance to aid them.

They have over five millions of children of the school age, and raise ten millions of dollars annually to educate them. The rest of the Union has ten millions of children of the school age, and raises sixty millions a year to educate them. We can pay sixty millions as easily as they can the ten, because our labor is now and always has been educated and productive. They have, according to the census of 1880, 4,804,171 children above the age of ten who are illiterate, while we have only 1,435,787. Hence, to save free government from sinking under this weight of ignorance, a weight which we aided in throwing upon them, they need a larger amount of money (and need it now) for education than they at present are able to pay. When once they are helped over this present difficulty they can take care of themselves. The annual loss now to these States through the illiteracy of their laborers is more than double the whole cost of their present public schools.

A few years ago the Commissioner of Education made an investigation into the character, condition, and productiveness of the laborers

in all the great centres of toil in the United States, including every kind of labor, from the rudest and simplest to the most skilled. A series of questions propounded to the employers brought out the information required on all points. This information, generalized and reduced to a scale (assuming the illiterate laborer as the unit), gives the following instructive results: Considered as a mere machine of production, the laborer with a common school education will, on the average, produce annually 25 per cent. more than the illiterate; if he has an academic education he will produce 50 per cent. more; and if a collegiate education, 100 per cent. more.

Now, according to the census of 1870, there were in the southern part of our country about one million one hundred and forty-seven thousand (1,446,667) illiterate male adults. Putting the annual product of an illiterate laborer at the minimum sum of \$100, which is far below the average, the annual product of a laborer with a common school education would be \$125. Then these one million one hundred and forty-seven thousand illiterate male adults in the South, had they received a common school training, would produce annually \$25 apiece (or \$28,675,000) more than they now do. This is more than double the whole amount spent there on public education, which in 1879 was \$12,181,602. The loss to the country through the inefficiency of illiterate labor is but a small part of the actual loss from illiteracy, for an examination of the statistics of the whole country, as given in the census of 1870, shows that the illiterates produce thirty times their proportionate share of paupers and ten times their proportionate share of criminals.

The annual expense in the city of New York alone entailed by the pauper and criminal classes, in supporting the one and protecting society against the other, is five millions a year.

I have not been able to ascertain the annual expense of supporting the paupers and protecting society against the criminals in the Southern States; but if it is one-half as great, according to the population, as in the city of New York, it would be over \$25,000,000 a year. Now, it is calculated by experts in social science that 96 per cent. of pauperism can be eradicated by education, and that at least one-half of the crime in the community can be prevented by education.

In the Grand Duchy of Baden, with a population of a million and a half, they reduced the number of paupers 25 per cent. and the number of crimes 51 per cent. by enforcing a thorough system of universal education for the space of seven years, 1854 to 1861.

If pauperism and crime in the Southern States were reduced to a minimum by a vigorous enforcement of the education of all the children to the extent of the course of study in our common schools, it would produce, then, an annual saving to the community in the pauper and criminal expenses of fifteen millions of dollars. This, with the gain of over twenty-eight millions a year in the increased production of the laborers through educating them to the extent of the curriculum of the free

common school, would give an annual increase of production and saving of expense equal to forty-three million dollars.

This is the financial gain in that part of our country alone to be made through universal education in the elementary branches. If this were done, the South would be amply able to support as complete a system of free common schools as there is now in the State of Massachusetts; and with an enforced attendance, by a compulsory law, of every child that is of the school age, so as to eliminate from society in the future the illiterate adult, it would no longer be afflicted with the evils and threatened with the dangers arising from ignorant suffrage. It would be able, without difficulty, through the increased productiveness of its labor, to pay, in a very few years, not only the interest, but the principal, of all its State debts; and individual solvency would be so universal that every merchant who traded with their people would be able to collect promptly the pay for his goods.

The South now, through the illiteracy of its people, and the consequent deficiency in production and in accumulated wealth, pays but a small portion of the national taxes.

If by giving them out of the national treasury, for ten years, a few millions of dollars a year to aid in public education we can eradicate illiteracy, and as a consequence reduce the pauper and criminal expenses as well as make their labor efficient, they will in a few years be able to return the money to the national treasury in the increased amount of national taxes they will pay by reason of the increased annual production and consumption and accumulated wealth of their people; so that, looked upon as a financial investment merely, the people of the old free school States think that national aid to public common school education, for a limited period, is the wisest and best use that Congress can make of a portion of the public money.

Many millions are appropriated for internal improvements; the power to do this in the Constitution is no clearer and the necessity much less than the power and necessity to appropriate money from the national treasury in aid of common school education. The internal improvement resulting from ridding ourselves of four million eight hundred thousand illiterate youth by educating them is infinitely greater than ever did or ever can result from the building of Government roads, canals, or railroads, or from improving rivers and harbors. .

If the bill in aid of public education now before Congress (appropriating fifteen million dollars for the first year and decreasing the amount by a million every year until at the end of ten years the whole appropriation ceases, and distributing the money to the States according to the number of illiterates in each by the census of 1880) becomes a law, the old free school States will receive a reasonable share of the money, for the immigrants that have been pouring into the country for the last twenty years—last year to the extent of three-quarters of a million—have nearly all settled in those States; and among those immigrants is a

large body of illiterates. The whole number in these States (chiefly foreign born above the age of ten years) according to the census of 1880 is nearly a million and a half, and the number of illiterate adults is half a million. The proportion of this money that we shall receive will be sufficient to go far toward eradicating this illiteracy, and hence every dollar given to the North will return in the end many times to the public treasury through the improved condition and capacity to pay taxes in the future of the million and a half illiterates.

Therefore, in whatever light we look at the question, whether as a mere matter of dollars and cents, a matter of humanity, of civilization, of free government, or of mere duty to our brethren, it seems to us at the North to be a wise, a patriotic, and a practical measure of relief, not only to the Southern States, but to the whole country, to appropriate this money at once, and distribute it under the supervision of the Bureau of Education from year to year, while the treasury is overflowing, so as to bring the whole country, North and South, East and West, up to the very front rank of public education, intelligence, industry, and thrift.

The whole southern part of the educational map of the country presented in the first volume of the census of 1880 is covered with black, threatening clouds. Let us clear up our southern sky, and illuminate it with the bright sunshine of universal intelligence, before the storm that mutters at every election bursts upon us.

At the conclusion of this paper Hon. J. L. M. CURRY, LL. D., agent of the Peabody education fund, was announced as the next speaker. He thought it best to say nothing. Calls for remarks from him being repeated, however, he consented to address the meeting, and after adverting to the difficulties of his situation caused by the lateness of the hour, he proceeded to speak extemporaneously as follows:

There are two postulates which must necessarily be assumed in this discussion, which, of course, I shall not in the slightest degree elaborate; and the first is that intelligence and integrity are the basis of free representative republican institutions. Such was the opinion of the fathers, as could be easily substantiated by most numerous citations. As was expressed in that admirable paper (Professor Hall's) this morning, education is fundamental to the right discharge of the duties and functions of American citizenship. We should regard it as the greatest dereliction of duty if the scions of nobility, those who are to be kings and emperors and to wear crowns, were not trained and disciplined in early life for their civil and political duties; and it is but little short of treason, in my humble judgment, for those who are charged with responsibility in this country—a government, as Mr. Lincoln epigrammatically and forcibly expressed it, “of the people, for the people, and by the people”—to neglect the education of American citizens. Universal education, to my mind, is a *sine qua non* for the security and the prosperity of this Republic.

My next postulate is that this universal education is the work of government, and must be furnished in large measure by government action and government revenues. Universal education, in the first place, is the right of the citizen; but in the second place, and more immediately connected with the discussion of our subject to-night, it is an imperative duty. I am only stating a truism when I say that there is not a single instance in all educational history where there has been anything approximating universal education unless that education has been furnished by government. These are the postulates on which I build this brief argument.

Now, if universal education is a right and an imperative duty, my next proposition is that this primarily is the work of State governments. In our complex and federative system, States lie nearer to the people than does the National Government. All the interesting relations of life, husband and wife, parent and child, master and apprentice, guardian and ward, teacher and pupil, are relations with which the General Government has nothing to do in the first instance, but are peculiarly and specially, as every lawyer knows, within the province of the State governments; and, therefore, I hold that primarily and chiefly it is the duty of the States to furnish this education. The Northern States boldly and courageously have undertaken the work, and grandly and nobly have they performed it. The South now is following the example set. In every Southern State there is upon constitution or statute book a system of public schools modelled after the best examples of the Northern States and of European countries. Schools have been established under this system. Those schools are alike open to the white man and to the black man, to the late slave and to the late master. I do not mean that these are mixed schools; I mean, however, to assert with emphasis and positiveness that from Virginia to Texas, inclusive, precisely the same educational rights and the same educational privileges are granted to the black man as are furnished to the white man. What I have said, that the schools are open and the school money distributed upon a basis of absolute equality so far as white and black children are concerned, marks a most marvellous revolution in the history of this country. I wish I could get you to realize it. I can hardly conceive of any revolution in public sentiment, in manners, in customs, in habits, in laws, in institutions, so profound as the revolution which has taken place in the new South in the last eighteen years in reference to the public schools.

Much remains to be done. The laws are upon the statute books. A vast deal has been accomplished; but in school-houses, apparatus, school attendance, school enrolment, proper teaching, school revenues, there is a great deficiency, a very great deficiency. I need not tire you with statements after the elaborate and conclusive paper which has just been read in your hearing. What I wish to impress is that to make these schools at the South adequate to the need is a stupendous enter-

prise, not to be dealt with summarily or by temporary expedients, but by wise and liberal legislation. To the patriot, the Christian, the humanitarian, the illiteracy is absolutely appalling, and if I had a stronger word to use I should be glad to use it now in order to express the magnitude of the danger. What is vital to the subject that we are now considering is that it is impossible for the Southern States unaided, however willing they may be, to grapple with this gigantic problem. The difficulties have been suggested in part by Professor Hall—difficulties which are not realized by those unfamiliar with the habits and the people of that country. At the North population is dense; I believe about one-fifth is in cities and towns. In the South, in the rural districts, settlements are remote, communications are infrequent and imperfect, and the people very different from those in other sections of the country. Slavery sparsified population. Slavery concentrated wealth in a few hands. Slavery prevented the division of wealth among the people. Slavery created an aristocracy. Slavery made a public school system with free and universal education impossible. Thank God! slavery is gone and the negroes are irrevocably free! I never made an expression of gratitude with more sincerity than I made that declaration just now; and I beg you to remember that while I am accounting for the absence at the South of free public schools, and while I am pointing out some of the difficulties with which this question is environed and trying to deduce an argument of national obligation in consequence of this condition of affairs—I beg you to remember that the South did not introduce slavery into this country. It does not lie at her door.

Again, the South has been impoverished. It was not a poor country before the war as to aggregate wealth, but the wealth was in the hands of comparatively few; and as the result of the war the South has been impoverished. Will you just think of it for a moment, that you may take in that fact? I am not speaking of the loss of four billions of property on account of emancipation, but I wish you to consider that at the close of the war the negro himself possessed nothing but physical health and freedom, while among the white men banks were gone, insurance companies gone, all investments swept away, personal securities and negotiable notes valueless, labor disorganized, a new civilization introduced, and what had been regarded as the basis of wealth of the population of the future was all buried in one profound Serbonian bog. Reconstruction has not been easy; and I will whisper into your ears a secret which you may not have heard, that many of those who were there to reconstruct were not angels or saints made perfect. To reconstruct the government, to put back the cars which had been thrown off the track, was not by any means an easy work, but has required great courage, heroism, and patience.

I said a moment ago that the States of the South have put upon their statute books school systems. I think you would delude yourselves if you concluded that school systems because upon the statute

books are fixed or self operative. Please recall what my friend has so well spoken of, that those of us who have been friendly to the establishment of public schools have not been numerically the majority of the population of the South; that we have been waging a war against habits and traditions and the convictions of years, and, what is worse still, against this mass of unappreciative illiteracy which does not know its wants, and against what Lord Castlereagh styled the "ignorant impatience of taxation."

An increase of school revenues at the South cannot reasonably be expected. Much as has been done, it is not prudent or safe to risk public schools upon heavier taxation. To establish and to sustain are two different things. You may introduce and proclaim a constitution without giving it life. Probably there is no influence more potential on a people than the influence of the past. It is no easy matter to eradicate habits, traditions, and prejudices, the slow growth of centuries. It is supremest folly not to take account of the past. The ideal is not always the practicable. France in 1793 adopted a democratic constitution, but she foolishly forgot the centuries of monarchical and ecclesiastical despotism that lay behind. Our school systems are in antagonism to habits and traditions, and to save them and to save the Republic the General Government should give immediate and adequate aid. The discharge of an obligation belonging primarily to the States being impossible, if universal education is to be secured at all it must be by national aid.

If I were speaking before Congress or to congressmen, I believe I could demonstrate the constitutional potency of Congress to meet this evil and provide a remedy for this peril. My distinguished and able friend at the head of the Bureau of Education, among his other valuable labors, has demonstrated in a conclusive argument the power of this Government to render the national aid. The lawyers have a maxim that "the safety of the republic is the supreme law." Things are done in a time of war which the Constitution does not in terms authorize. In extreme and imminent peril, powers unusual are assumed. The question is whether this Republic is not in more peril to-day than it ever was from armies and navies arrayed in antagonism to it.

The New York Herald the other day had an outline map of the United States with the rivers all stained and blackened to represent the inundation of the great Father of Waters. A map to represent the inundation of ignorance would be more fearful and terrible than that map was; and if Congress can legislate and make an appropriation for the relief of the destitute and the suffering, how much more can Congress make an appropriation to preserve this Republic and transmit it unimpaired to those who are to come after us? I said I would not stop to argue that constitutional question, and I shall not. I place it simply on that old maxim which no one can dispute, that "the safety of the republic is the supreme law."

Hopefully, sanguinely, joyously, I look forward to and anticipate the future, and yet that man is a bold speculator and a daring prophet who says that a republican government has been established beyond the possibility of failure or destruction. Is the Republic in peril? I borrow the lucid and terse language of the paper to which I have referred when I say that the life of this Republic is one persistent, incessant struggle against ignorance. This illiteracy is due in large measure, not entirely, to the negroes, the colored people. They are not culpable for it, of course; and I hold that the Government which had power to liberate them, to citizenize them (if I may make a word), to enfranchise them, has the power to qualify them for freedom and citizenship. I quote the language, and I rejoice to quote the language, terse and truthful, of one of the most distinguished men of this land, that "slavery is but half abolished, emancipation is but half completed, while millions of freemen with votes in their hands are left without education."

Illiteracy on the part of the black man is no worse than on the part of the white man. Illiteracy is illiteracy; an ignorant voter is a peril to the perpetuity and the prosperity of our free institutions, whether that ignorant voter be a white man or a black man. Forty-five per cent. of the voting population of the South is illiterate. Three-fourths of the power in Congress to make laws may be in the hands of this illiteracy; I mean, of course, three-fourths of a majority. Illiteracy of such a multitude of white and black voters is a standing menace to free institutions; is a present, pervasive, potential peril. Elections by such men are a farce, if not a tragedy. Men vote as machines, and not as intelligent Americans. The voter is the pliant tool of the demagogue, who bids lower at each succeeding election, appeals to baser passions, and attempts more revolutionary, agrarian, communistic schemes. Whiskey and money are more influential than patriotism and reason. Justice, plighted faith, vested rights, immutable principles of truth and honor, go down before the fiery breath of the passionate and conscienceless multitude.

Universal suffrage necessitates universal education. Universal suffrage is not a panacea of all national ills; it is not always good government. In France it comported with Cæsarean absolutism. Coupled with a plebiscitum it was the willing ally of official candidature and Napoleonic perfidy. It is a degradation of the franchise to give it wholesale into the hands of ignorance, superstition, and pauperism. Lord Sherburne calls such lowering "the apotheosis of brute force," "the substitution of numbers for the decisions of intelligence and experience."

Mr. Hawkins says this is a Republic. True, and it was intended to be a representative Republic. A representative is not a mere deputy, a weather-cock, a blind automaton, to record the will and the passions of the multitude. He is to think for his constituents, to give them the benefit of intelligent patriotism, profound study of political economy,

the Constitution, and statecraft. He is to enrich his mind by observation, travel, study of history, and to train himself for his responsible duties. Ignorant suffrage reverses all this, and puts in public councils the weak, the vacillating, the corrupt. Fidelity to principle, courageous adherence to convictions, broad culture, ripe judgment, sage experience, will be of little worth, and the voice of the rabble becomes the interpreter of laws and contracts and the moulder of policy.

I have before me, but will not read—commending, however, to your attention—what General Grant has said on this subject, what President Hayes has said on this subject, what President Arthur has said on this subject; and I will read to you the words of President Garfield's inaugural address:

All the constitutional power of the nation and of the States and all the volunteer forces of the people should be summoned to meet this danger by the saving influence of universal education.

This aid should be given. It ought to be adequate aid. The peril is imminent; the necessity is present; the need of the people is urgent. The cancer grows worse and worse with the lapse of each day. State systems should not be superseded. The General Government should act in coöperation with State authorities, and not adopt any plan or practice or method which will subordinate them. The aid furnished ought to be given for primary education, for public schools, except in so far as may be required to train teachers, and in my judgment the aid should be coöperative and stimulating. The principle of the Peabody fund, by means of which the fund has multiplied its benefits four-fold, is to help those who help themselves. While the Government has the right and is in duty bound to follow the appropriation, to see that the money is properly applied, it ought to stipulate that so much will be done provided that the State will do more, so that the States in a few years will execute unaided this imperative obligation of providing an education for all their citizens.

Allow me to thank you for your patient attention and for the kindness with which you insisted at this late hour on my making these remarks, necessarily incoherent because unprepared.

The Department then adjourned, to meet in the same place at 10 o'clock on the following morning.

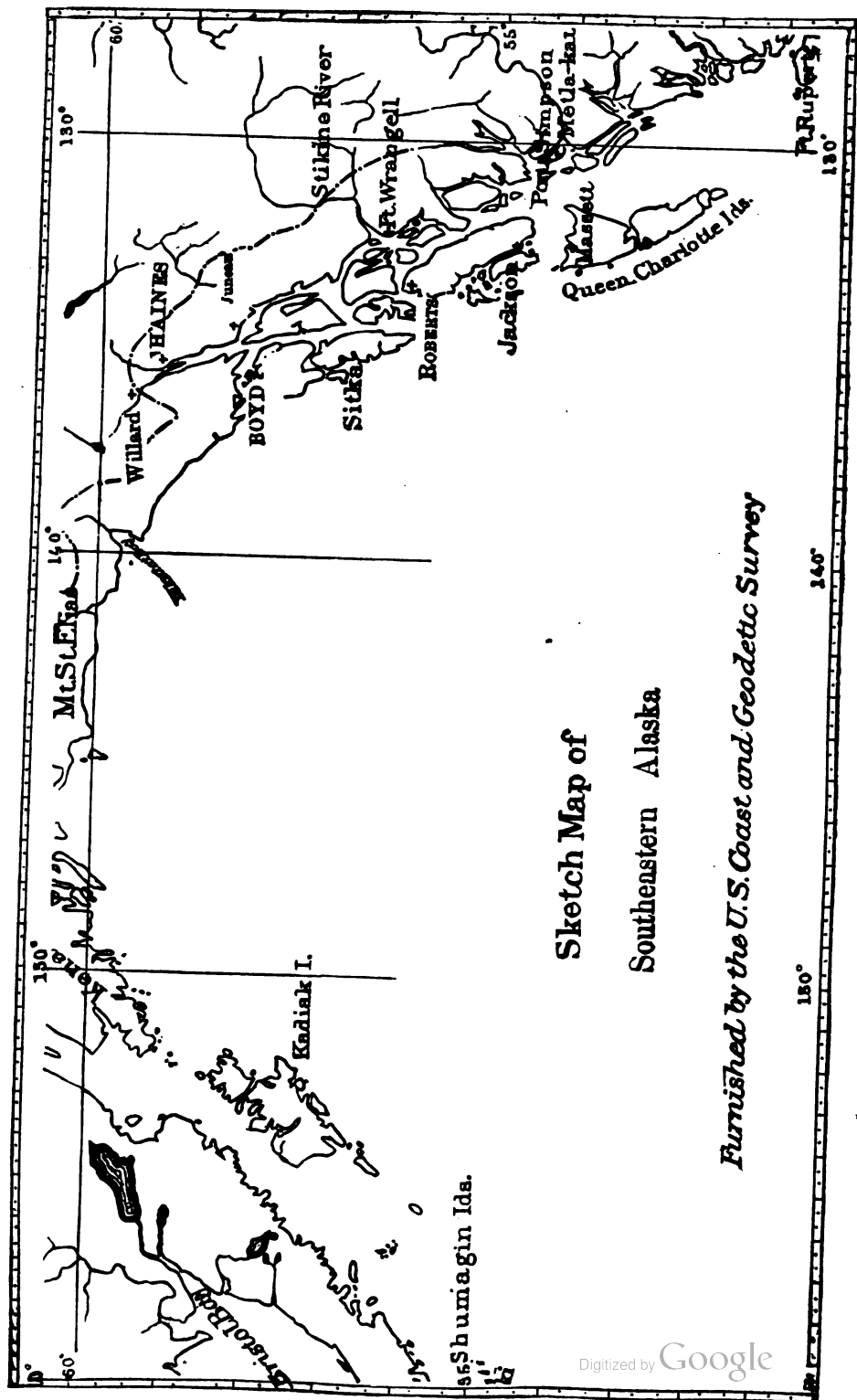
THIRD SESSION—THURSDAY MORNING.

WASHINGTON, *March 23, 1882.*

The meeting was called to order at 10 A. M., Mr. Stockwell in the chair, and was opened by prayer by Rev. SHELDON JACKSON, D. D.

General EATON read telegrams regretting inability to attend the meetings from Hon. J. D. Pickett, State superintendent of public instruction, Frankfort, Ky.; W. T. Harris, LL. D., Concord, Mass.; and Hon. A. D. White, LL. D., president of Cornell University, Ithaca, N. Y.; to-





Sketch Map of

Southern Alaska

Furnished by the U.S. Coast and Geodetic Survey

gether with letters from Hon. L. S. Cornell, State superintendent of public instruction, Denver, Colo.; Hon. James P. Slade, State superintendent of public instruction, Springfield, Ill.; Hon. H. C. Speer, State superintendent of public instruction, Topeka, Kans.; Hon. D. L. Kiehle, State superintendent of public instruction, St. Paul, Minn.; Hon. J. A. Smith, State superintendent of public education, Jackson, Miss.; Hon. J. W. Patterson, State superintendent of public instruction, Concord, N. H.; Hon. Neil Gilmour, State superintendent of public instruction, Albany, N. Y.; Hon. R. H. Howey, territorial superintendent of public instruction, Helena, Mont.; George B. Lane, superintendent of schools, Omaha, Nebr.; John E. Kimball, superintendent of schools, Newton, Mass.; John Hancock, superintendent of schools, Dayton, Ohio; William Simous, superintendent of schools, Charleston, S. C.; J. W. Bulkley, assistant superintendent of schools, Brooklyn, N. Y.; B. M. Zetter, superintendent of schools, Bibb County Ga.; H. M. Parker, superintendent of schools, Elyria, Ohio; George W. Twitmyer, superintendent of schools, Watsontown, Pa.; J. Fairbanks, school commissioner of Greene County, Mo.; J. M. Fish, superintendent of schools, Little Rock, Ark.; John W. Taylor, superintendent of schools, San Francisco, Cal.; N. A. Calkins, vice president of the department of superintendence, New York; President E. E. White, Purdue University, Lafayette, Ind.; J. P. Wickersham, LL. D., ex-State superintendent of public instruction, Lancaster, Pa.; Prof. W. H. Payne, Ann Arbor, Mich.; T. W. Bicknell, LL. D., Boston, Mass.; and E. J. James, PH. D., Normal, Ill.

Mr. SHELDON read a memorial in regard to the late Bernard Mallou, of Georgia.

Rev. SHELDON JACKSON, D. D., was then introduced, who spoke as follows:

THE NEGLECT OF EDUCATION IN ALASKA.

MR. PRESIDENT AND FRIENDS OF EDUCATION: So little is known concerning Alaska, the latest acquired and least known section of our country, that I am sure you will welcome a few general remarks concerning the country as a prelude to the subject of the education of its people.

EXTENT AND PHYSICAL CHARACTERISTICS.

To say that Alaska contains 580,107 square miles gives no adequate conception of its great size. That impression is better secured by a series of relative comparisons.

For instance, from extreme north to south is 1,400 miles in an air line, or as far as from Maine to Florida; and from its eastern boundary to the end of the Aleutian Islands, 2,200 miles in an air line, or as far as from Washington to California.

The island of Attu, at the end of the Aleutian chain, is as far west

of San Francisco as Maine is east; so that between the extreme eastern and western sections San Francisco is the great central city.

Or take another basis of comparison: Alaska is as large as all the New England and Middle States, together with Ohio, Indiana, Illinois, Wisconsin, Michigan, Kentucky, and Tennessee combined, or as large as all the United States east of the Mississippi River and north of Georgia and the Carolinas, or nearly one-sixth of the entire area of the United States. It has a coast line of 25,000 miles, or two and a half times more than the Atlantic and Pacific coast lines of the remaining portion of the United States. The coast of Alaska if extended in a straight line would belt the globe. Commencing at the north shore of Dixon Inlet, in latitude $54^{\circ} 40'$, the coast sweeps in a long regular curve north and west to the entrance of Prince William's Sound, a distance of 550 miles; thence 725 miles south and west to Unimak Pass, at the end of the Aliaska Peninsula. From this pass the Aleutian chain of islands sweep 1,075 miles in a long curve almost to Asia, the dividing line between Russia and the United States being the meridian of 193° west longitude. North of Unimak Pass the coast forms a zigzag line to Point Barrow, on the Arctic Ocean, and thence south of east to the boundary.

Alaska is the great island region of the United States, having off its southeastern coast a large archipelago. The 732 miles of latitude from Puget Sound to the head of Lynn Channel contain a remarkable stretch of inland ocean navigation, noted for its bold shores, deep water, numerous channels, innumerable bays and harbors, abundance of fuel and fresh water, and shelter from the swells of the ocean.

The southern portion of this great archipelago is in Washington Territory, the central portion in British Columbia, and the northern portion in Alaska. The portion in Alaska has been named the Alexander Archipelago. It is about 300 miles north and south and 75 miles wide, and is variously estimated to contain from 1,000 to 10,000 separate islands. The aggregate area of these islands is 14,142 square miles.

Six hundred miles to the westward is the Kadiak group, aggregating 5,676 miles; then the Shumagin group, containing 1,031 square miles; and the Aleutian chain, with an area of 6,391 square miles. To the northward is the Pribyloff group (seal islands), containing, with the other islands in Bering Sea, 3,963 square miles.

The total area of the islands of Alaska is 31,205 square miles, which would make a State as large as the great State of Maine.

It is the region of the highest mountain peaks in the United States. The Coast Range of California and the Rocky Mountain Range of Colorado and Montana unite in Alaska to form the Aliaskan Mountains. This range, instead of continuing northward to the Arctic Ocean, as the old atlases represent, turns to the southwestward, extends through and forms the Aliaska Peninsula, and then gradually sinks into the Pacific Ocean, leaving only the highest peaks visible above the water.

These peaks form the Aleutian chain of islands. The islands decrease in size, height, and frequency as the mountain range sinks lower into the ocean. Unimak, the most eastern of the chain, has that magnificent volcano Shishaldin, 9,000 feet high; then Unalashka, 5,691 feet; next Atka, 4,852 feet; then Kyska, 3,700 feet; and Attu, the most western of the group, only 3,084 feet high.

In the Aliaskan Range are the highest peaks in the United States: Mount St. Elias, 19,500 feet high; Mount Cook, 16,000 feet; Mount Crillon, 15,900; Mount Fairweather, 15,500, and numerous others. In addition to the Aliaskan Range, are the Shaktolik and Ulukuk Hills, near Norton Sound; the Yukon and Romauzoff Hills, north of the Yukon River; the Kaiyuh and Nowikakat Mountains, east and south of the river, and a low range of hills bordering the Arctic coast.

Alaska contains the great volcanic system of the United States. Grewingk enumerates 61 volcanoes, mainly on the Aliaska Peninsula and Aleutian Islands, that have been active since the settlement by Europeans.

It is the great glacier region. From Bute Inlet to Unimak Pass nearly every deep gulch has its glacier, some of which are vastly greater and grander than any glacier of the Alps.

On Lynn Channel is a glacier computed to be 1,200 feet thick at the "snout" or lower projection. In one of the gulches of Mount Fairweather is a glacier that extends fifty miles to the sea, where it ends abruptly in a perpendicular ice wall 300 feet high and eight miles broad. Thirty-five miles above Wrangell, on the Stikine River, between two mountains 3,000 feet high, is an immense glacier forty miles long and at the base four to five miles across, and variously estimated from 500 to 1,000 feet high or deep.

Alaska abounds in hot and mineral springs. According to Dall, there are large ones south of Sitka; also on Perenosna Bay, on Amagat Island, and Port Moller. On Unimak Island is a lake of sulphur. Near the volcano Pogrumnoi are hot marshes. Boiling springs are found on the islands Akhun, Atka, Unimak, Adakh, Sitignak, and Kanaga. These latter have for ages been used by the natives for cooking food. In the crater of Goreloi is a vast boiling, steaming mineral spring eighteen miles in circumference. A lake strongly impregnated with nitre is found on Beaver Island. The thermal springs on the island of Unalashka hold sulphur in solution.

The northern portion of the Territory, within the Arctic Circle, is famous for its beautiful auroral displays.

Alaska contains one of the largest rivers of the United States. The river Yukon is 70 miles wide across its five mouths and intervening deltas. At some points along its lower course one bank cannot be seen from the other. For the first thousand miles it is from one to five miles wide, and in some places, including islands, it is 20 miles from

main bank to main bank. Navigable for 1,500 miles, it is computed to be 2,000 miles long.¹

The other principal rivers of the Territory are the Stickine, 250 miles long; the Chilkat; the Copper; the Fire; the Nushergak, a large shallow stream 150 miles long; the Kooskovime, next to the Yukon in size, and between 500 and 600 miles long; the Tananah, 250 miles (this river is half a mile wide at its mouth, with a very strong current); the Nowikakat, 112 miles; and the Porcupine. The last three are tributaries of the Yukon. The only river of any size flowing into the Arctic Ocean is the Colville, for a long time supposed to be the outlet of the Yukon.

PRODUCTS OF ALASKA.

Alaska is rich in material resources.

The chief value of Alaska to Russia was its wonderful fur supplies; and when the Territory was sold to the United States the most prominent attraction was the seal fur fisheries on the Pribyloff group of islands, in Bering Sea. To protect these valuable interests the Government leased these islands for twenty years to an incorporated company known as the "Alaska Commercial Company." They pay the Government an annual rental of \$55,000 for the islands and a royalty of \$262,500 a year on the 100,000 seal skins allowed by law to be taken.

Thus these two little islands — St. Paul, 13 miles long and 6 wide, and St. George, 10 miles long and 6 wide — furnish nearly all the seal skins used in the markets of the world, and have paid a revenue into the United States Treasury from 1871 to 1882 of over three million dollars; and yet it is thought by some that Alaska was a worthless purchase.

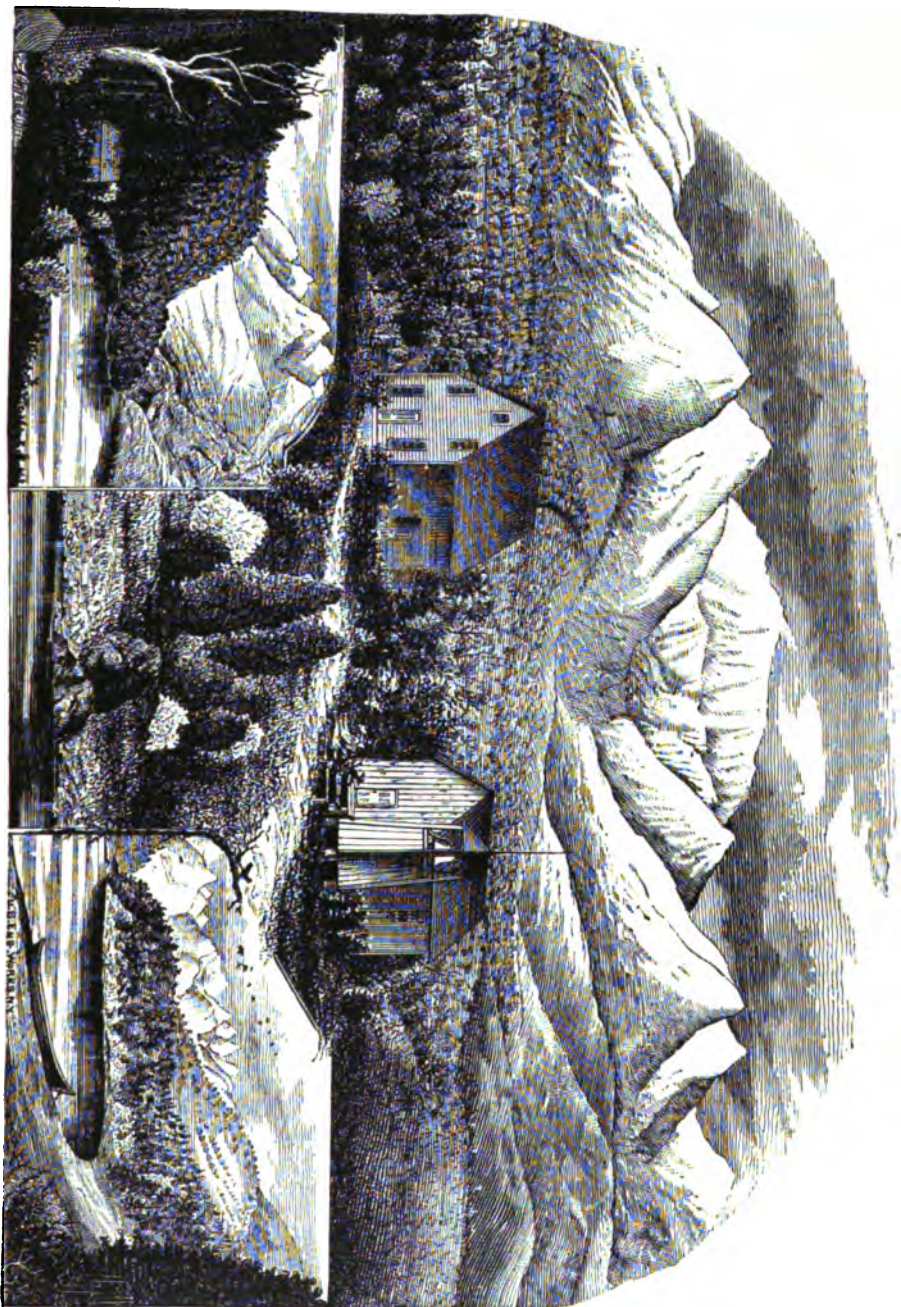
The Alaska Company has a number of trading stations in addition to its seal fisheries.

The next most valuable fur is that of the sea otter. In 1880 these skins were quoted at from \$20 to \$200 each.

The principal land fur bearing animals are the several varieties of the fox, the mink, beaver, marten, lynx, otter, bear, and wolverine. There are also the skins of the whistler, reindeer, mountain goat and sheep, ermine, marmot, muskrat, and wolf.

The waters and coast of Alaska abound in fish. Every naval or scien-

¹ Since making this address I have received a copy of a letter written by Robert Campbell, of the Hudson's Bay Fur Company, to Hon. M. C. Butler, United States Senate, in which Mr. Campbell represents the Yukon and its tributary Pelly as navigable at certain seasons nearly 3,000 miles. Mr. Campbell says: "In the spring of 1840 * * * I crossed the mountains and came on the headwaters of a magnificent stream, which I named the 'Pelly River.' * * * In 1850 I received permission to explore the Pelly down to its mouth, * * * in due time reaching Fort Yukon, * * * setting the question at rest that the Pelly and Yukon were one and the same river. * * * Three kinds of salmon ascend the river as far as Pelly Banks, which is about three thousand miles from sea-coast. * * * When in full freshet flow in summer steamers could ascend to within 30 miles of Pelly Banks." S. J.



Chilcat School-House and Teacher's Residence, Haines, Alaska.

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tific expedition, from the time that Captain Cook in circumnavigating the globe visited those waters to the present time, has not failed to report the great quantities of salmon, cod, herring, halibut, mullet, ulikon, and other fish of commerce.

Cod are found from the Seal Islands southward, but are most abundant on the banks in the Kadiak and Aleutian Archipelagoes. Three San Francisco firms engaged in the business caught 3,000 tons during 1879 on the banks off the Shumagin Islands.

Alaska can also supply the world with salmon, herring, and halibut of the best quality. Salmon canneries have been established near Sitka, at Klawak, and at Kasa-an Bay.

Alaska is the great reserve lumber region of the United States. It is only a question of a few years when the forests of Maine, Michigan, Wisconsin, Minnesota, and even Puget Sound will be denuded of their best timber. Then the country will appreciate those thousands of square miles of yellow cedar, white spruce, hemlock, and balsam fir that densely cover the southeastern section of Alaska.

The indications are that Alaska is very rich in minerals. Coal is found all along the coast. The most valuable of the known deposits are found in Cook's Inlet. Coal has also been taken and used by the United States revenue marine steamer *Corwin* from the Arctic coast.

Petroleum is found floating on a lake near the Bay of Katmai. It is quite odorless, and in its crude state has been used by the Russians for lubricating machinery. Large deposits have also been found on Copper River.

Specimens of pure copper have been found in many places. It is so abundant on Copper River as to give its name to that stream. At Kasa-an Bay a valuable mine of bronze copper is being worked by an English company. Lead in small quantities is found on Whale Bay, south of Sitka, and also in Kadiak Island.

Iron is common to many sections of the territory. Graphite is found at several places. A fine quality of marble exists in inexhaustible quantities. A fine quality of bismuth is found on Vostovia Mountain. Kaoline, fire clay, and gypsum are also found. Sulphur exists in large quantities. Amethysts, zeolites, garnets, agates, carnelians, and fossil ivory are found. Indeed, the people of the United States have no conception of the mineral wealth of Alaska.

Gold is found in a number of places and supposed to exist in many others. Up the Stikine River, through Alaska, over on the headwaters of Deese River, are the Cassiar mines of British Columbia, where from 2,000 to 3,000 miners have spent several summers in placer mining. The annual product of these mines has been from \$800,000 to \$1,000,000.

During 1881 gold mines, both placer and quartz, were opened on Gastineaux Channel, opposite Douglass Island, Alaska, where the American town of Juneau was built. The yield for the first summer was over \$30,000.

CLIMATE.

In a country as extended as Alaska, with its large rolling plains, wide valleys, and high mountains, there is necessarily a wide diversity of climate. In a general way it may be said that inland Alaska has an arctic winter and a tropical summer. At Fort Yukon the thermometer often rises above 100° in summer and indicates from 50° to 70° below zero in winter. At Nulato, on the Yukon River, the fall of snow during the winter averages 8 feet and frequently reaches 12 feet. Along the immense southern coast and islands the climate is moist and warm.

The greatest cold recorded on the island of Unalashka, by a Greek priest, during a period of five years, was zero of Fahrenheit; extremest heat for the same time was 77° . The average for five years at 7 A. M. was 37° ; 1 P. M., 40° ; and 9 P. M., 36° . The average of weather for seven years was 53 all clear days, 1,263 half clear, and 1,235 all cloudy. It is very much the climate of Northwestern Scotland.

At St. Paul Harbor, Kadiak Island, the mean annual summer temperature is 54° and winter 29° ; the coldest month, February, with the thermometer at 27° ; and the warmest, July and August, with a mean temperature of 57° , the extremes being from 6° to 75° . The climate is that of Southern Sweden and Norway. The annual rainfall is about 73 inches.

At Sitka, where, with the exception of a few short gaps, a record of the thermometer has been kept for 45 years, it has been found that the mean spring temperature was 41.2° ; summer, 54.6° ; autumn, 44.9° ; winter, 32.5° ; and for the entire year, 43.3° . The greatest degree of heat recorded in these 45 years was 87.8° , and of cold 4° below zero. The thermometer has recorded below zero during only four of the 45 years, and above 80° during only seven of those years. The mean annual temperature for 45 years has ranged from 41.3° to 46.8° , a difference of but 5.5° . The annual rainfall was 81 inches.

During a period of 43 years there has been an average of 200 rainy or snowy days a year, the most favorable year being 1833, with 82 rainy and 32 snowy days, and the most unfavorable 1856, with 258 rainy and 27 snowy days.

From these facts, taken from the Alaska Coast Pilot, Appendix 1, Meteorology, A. D. 1880, the surprising fact is brought to light that the winter climate of Southeastern Alaska for 45 years past has been the average winter climate of Kentucky and West Virginia and the average summer climate of Minnesota.

This mild climate of Southern Alaska is due to the warm Japan current of the Pacific, the Kuro-Siwo, which first strikes the American continent at the Queen Charlotte Islands, in latitude 50° north. Here the stream divides, one portion going northward and westward along the coast of Alaska and the other southward along the coast of British Columbia, Washington, Oregon, and California, giving them their mild winter climate.

The former stream, flowing northward, has been named "the Alaska current," and gives the great southern coast of Alaska a winter climate as mild as that of one-third of the United States.

The physical configuration of Alaska naturally divides it into three districts: the Yukon, extending from the Alaskan range of mountains to the Arctic Ocean; the Aleutian, embracing the Aliaska Peninsula and islands west of the one hundred and fifty-fifth degree of longitude; and the Sitkan, including Southeastern Alaska.

Concerning the Yukon district but little is known, except of the coast and along the Yukon River.

The Coast Pilot, a publication of the United States Coast Survey, represents the country between Norton Sound and the Arctic Ocean as "a vast moorland, whose level is only interrupted by promontories and isolated mountains, with numerous lakes, bogs, and peat-beds. Wherever drainage exists, the ground is covered with a luxuriant herbage and produces the rarest as well as most beautiful plants. The aspect of some of these spots is very gay. Many flowers are large, their colors bright, and though white and yellow predominate, other tints are not uncommon. Summer sets in most rapidly in May, and the landscape is quickly overspread with a lively green." The extreme heat and constant sunshine cause it to produce rank vegetation. The commercial value of this section is mainly in its furs.

The Aleutian district is largely mountainous and of volcanic formation. Between the mountains and the sea are, however, many natural prairies, with a rich soil of vegetable mould and clay, covered with perennial wild grasses.

This district, except at the eastern end, is without timber larger than a shrub. The principal resource at present is in the wonderful fisheries off its coast.

The Sitkan district is mountainous in the extreme, and the larger portion covered with dense forests. The great wealth of this district is in its lumber, fish, and minerals. Many garden vegetables are raised with success.

With regard to Alaska, Mr. William H. Dall, of the Smithsonian Institution, writes, after a trip to Europe: "I come back convinced, from personal inspection, that Alaska is a far better country than much of Great Britain and Norway, or even part of Prussia."

MEANS OF COMMUNICATION.

The routes of travel to Alaska are not very numerous. A steamer carrying the United States mail between Port Townsend, Washington Territory, and Fort Wrangell and Sitka, Alaska, makes a monthly trip.

Two small steamers run at irregular intervals during the summer from Victoria, B. C., to Fort Wrangell, calling en route at the several trading posts on the coast of British Columbia.

The country west of Sitka, including the Aleutian Islands and the

great interior and main section of the territory, is reached from San Francisco; so that a citizen of Oregon, in order to reach Kadiak, Unalashka, the seal islands, St. Michael, or the numerous villages on the Yukon River, is under the necessity of going by the way of San Francisco. From this latter place there is frequent communication with Western Alaska, and once a year with the central and northern sections.

POPULATION.

The census of 1880 gives the following enumeration: Yukon division, 7,000; interior division, 2,226; Kuskokwim, 3,654; Bristol Bay, 4,340; Kadiak, 2,606; Kenai, 984; Belkovsky, 669; Unalashka, 1,392; islands in Bering Sea, 1,290; Prince William Sound, 500, and Southeastern Alaska, 6,725; making 31,386, of whom about 18,000 are supposed to be Eskimo or Innuít. In addition to the above are about 1,500 whites in Southeastern Alaska, mainly traders and miners.

The Aleutian population and a portion of the Innuits were so far brought under the influence of the Russians that they became civilized, and are living after European methods. Among these the Greek Church of Russia claims from 8,000 to 9,000 members.

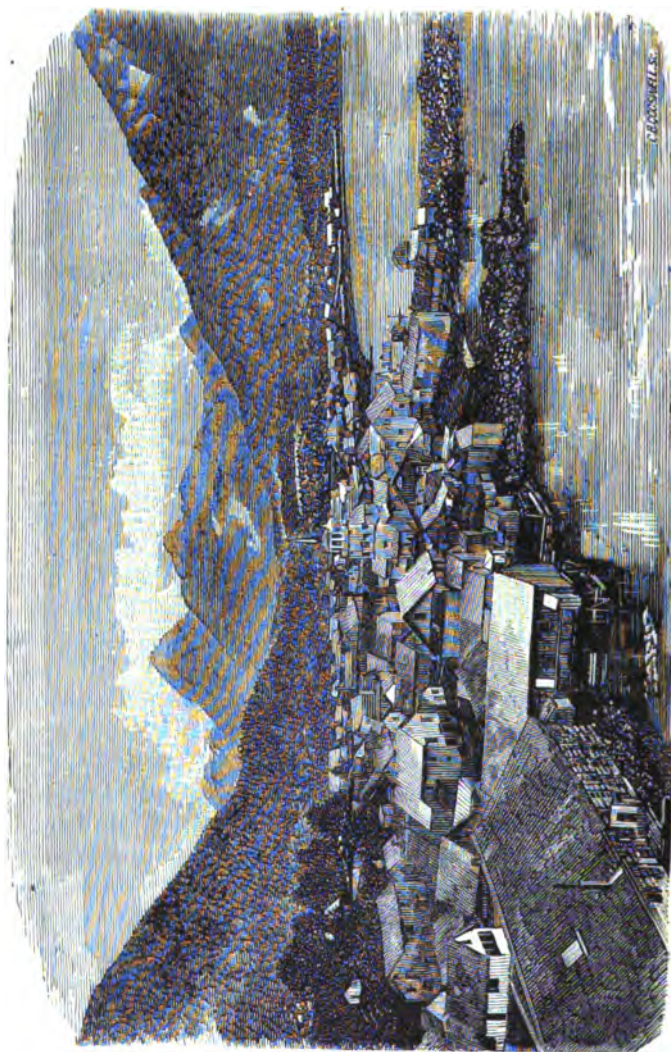
The remaining Innuít and Indian population are largely in their original condition.

EDUCATION UNDER THE RUSSIAN GOVERNMENT.

Information concerning Russian schools in Alaska is very meagre, the available source to the English reader being the admirable work of William H. Dall, *Alaska and its Resources*, pages 351 and 352. The first European settlers were Russians, attracted by the valuable furs and skins. Many of these married Indian women and raised families of mixed blood or creoles. As these children increased and grew up there began to be, on the part of some of the fathers, a felt need for schools. Accordingly, Gregory Shélikoff, governor of the colony and founder of the Russian-American Fur Company, established a school at Kadiak, about the year 1792, which was taught by the trader. In 1803 it reported 30 pupils, who were studying arithmetic, navigation, and four mechanical trades. In 1805 the imperial chamberlain and commissioner, Count Nikolai Resánoff, organized a school at Kadiak, under the name of the "House of Benevolence of the Empress Maria," in which were taught the Russian language, arithmetic, and the Greek religion. This school was reorganized in 1820.

About the same time a school was opened at Sitka, with a very precarious existence until 1820, when it came under the charge of a naval officer, who kept a good school for thirteen years. In 1833 this school came under the direction of Etolin, who still further increased its efficiency. Etolin was a creole who, by the force of ability and merit, raised himself to the highest position in the country, that of chief director of the Fur Company and governor of the colony. He was a Lu-





Sitka, Alaska.

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theran, the patron of schools and churches. While governor he erected a Protestant church at Sitka, and presented it with a small pipe-organ, which is still in use.

In 1825, Veniaminoff, who afterwards became the metropolite of Moscow, established a school for natives and creoles at Unalashka. In 1860 it reported 50 boys and 43 girls. This school is still in existence, but with a small and irregular attendance. It is supported at the expense of the Alaska Commercial Company. For the use of the schools, Veniaminoff prepared an alphabet and grammar in the Aleutian language. In 1837 a school was established for girls, children of the employés of the Fur Company, and orphans. In 1842 it had 42 pupils, and 22 in 1862 when it disbanded.

In 1840 there were in the colonies 8 schools, 4 for boys and 4 for girls. Besides the colonial school at Sitka was one for orphan boys and sons of workmen and subaltern employés of the Fur Company, in which were taught reading, writing, arithmetic, grammar, mechanical trades, and religion. The most proficient of the pupils at the age of 17 were advanced to the colonial school and prepared for the navy or priesthood. The number of boarders was limited to 50. The school was in charge of Lieutenant Commander Prince Maxutoff, assistant governor of the colony. In 1847 the attendance was 52; in 1849, 39; and in 1861, 27.

In 1839 a girls' school of a similar character was established and number of boarders limited to 40. The course of study comprised Russian language, reading, writing, arithmetic, household work, sewing, and religion. In 1848 the school numbered 32; in 1849, 39; and in 1861, 26.

In 1841 a theological school was established at Sitka, which in 1845 was advanced to the grade of a seminary. In 1848 it reported 30 boarders, 12 day pupils and 12 creoles being educated in Russia. Of those in Russia, 2 were in training for pilots, 1 as merchant, 1 gunsmith, 1 fur dealer, 1 tailor, and 1 cobbler. In 1849 the attendance was reported 28, with 11 others in Russia.

In 1859 and 1860 the common schools at Sitka were remodelled in order to secure greater efficiency. The course of study consisted of Russian, Slavonian, and English languages, arithmetic, history, geography, book-keeping, geometry, trigonometry, navigation, astronomy, and religion. A knowledge of Russian, reading, writing, and the four rules of arithmetic was required for admission. A pupil failing to pass examination two years in succession was dropped. The course extended over five years. Extra compensation was allowed teachers who secured the best results. The faculty consisted of a principal, who was a graduate of the School of Commercial Navigation; a free pilot, who taught navigation; an employé of the company, who taught book-keeping and commercial branches; one priest and two licentiates, graduates of the University of St. Petersburg.

The corresponding school for girls was in charge of a lady graduate of one of the highest female schools in Russia, with two male teachers.

This made five schools at Sitka: two for the children of the lower class, two for the higher class, and one seminary.

On Spruce Island a Russian monk kept a school for thirty consecutive years for giving instruction in the rudimentary arts and agricultural industries.

In 1860 a school was reported on Amlia Island, with 30 in attendance. All these schools have been discontinued. A school-house was erected on the Lower Yukon, but never used. The result of these schools, especially among the Aleuts, is thus summed up by Hon. W. S. Dodge, of Sitka:

Nearly all of them read and write. Around their homes, in their churches and schools, are seen many if not all the concomitants of ordinary American homes. Many among them are highly educated, even in the classics. The administration of the Fur Company often reposed great confidence in them. One of their best physicians was an Aleutian; one of their best navigators was an Aleutian; their best traders and accountants were Aleutians.

EDUCATION SINCE THE PURCHASE.

In 1867 Alaska, with its inhabitants, became a part of the United States. The schools sustained by the Fur Company, representing the Russian government, were disbanded. It was reasonable, however, to suppose that 30,000 people would be much better off and have better schools under American than under Russian rule. It was but reasonable to expect that the United States, that bases its continued existence upon the intelligence of its citizens and glories in its common school system, would replace the disbanded Russian schools with those of a higher grade and improved methods; that a people who, through their State systems, practically furnish a free education to all, and through their General Government appropriate thousands of dollars annually for Indian education and civilization, would not neglect to extend school privileges to the natives of their latest acquired territory; for whatever may have been the views held as to the expediency of the purchase, all will admit that, having acquired it, the Government is bound to care for it.

But these reasonable and just expectations have not been realized. The Government, with two exceptions that will hereafter be mentioned, has done nothing. The schools once taught by the Russian priests have one after another died, until only two remain—those of Unalashka and Belkovsky—and, according to the census of 1880, the average attendance at these is less than ten of both sexes. They are also irregularly kept. If only one or two appear at school time, the session is adjourned until more arrive, or even to the next day. No English is taught and only the rudiments of Russian. The children of those who learned to read and write in the Russian schools, deprived of schools by the neglect of the Government, are left to grow up in ignorance, until, among the 7,000 or 8,000 members of the Græco-Russian Church, the census reports less than 400 able to read or write in the Aleutian, Kadiak, or Russian languages. Outside of the Aleuts and a few at Sitka, among the





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Fort Wrangell, Alaska.

Eskimos and Indian population none can read or write except those that during the past four years have attended the schools established by the Presbyterian Church in Southeastern Alaska.

For ten years after the purchase the entire population, with the exception of the two small Russian schools previously mentioned and two small ones on the Seal Islands, were left without any educational opportunities whatever.

In 1877 my attention was earnestly called to this state of things, and since that time I have made three visits to Southeastern Alaska, and secured for the Board of Home Missions of the Presbyterian Church the establishment of five schools in Southeastern Alaska. The movement, however, commenced from without, and was the result of mission schools among the neighboring tribes in British Columbia.

Fort Wrangell schools.—In the spring of 1876 nine Tsimpshean Indians came up the coast from Fort Simpson, British Columbia, and took a contract for cutting wood for the military post then at Fort Wrangell, Alaska. On the Sabbath, as was their custom, they gathered for worship. They found a warm friend in Capt. S. P. Jocelyn, of the Twenty-first United States Infantry, who was then in command at that station. He assisted them in procuring a room for Sabbath worship and protected them from interruptions. He also supplied them with some small hymn-books sent to the fort by the American Tract Society. At the close of their contract, in the fall, as they were about returning to Fort Simpson, Clah, who had been the leader among these Indians, was persuaded to remain and open a school. Such was the anxiety of the people to learn that his school was attended by 60 to 70 adults besides children. "These people," said a sailor, "are crazy to learn. Going up the beach last night, I overheard an Indian girl spelling words of one and two syllables. Upon looking into the house, I found that, unable to procure a school book, she was learning from a scrap of newspaper that she had picked up."

Touched by the eagerness of this people to learn, a soldier at the post wrote to Major-General Howard, then in command of that military district, asking if some society could not be interested to send them a competent teacher. The letter was placed in my hands in May, 1877, and immediately published in the Chicago Tribune. Soon after it was published in the leading Presbyterian newspapers of the country, with a call for a teacher.

To gain a better understanding of this movement of the natives for a school, I made them a visit in August, 1877. In passing through Portland I found a teacher who had had large experience in mission work and Indian schools—Mrs. A. R. McFarland—whom I took with me. Going ashore upon our arrival, August 10, I heard the ringing of the bell for the afternoon school, and went directly to the school-house.

About twenty pupils were in attendance, mostly young Indian women. Two or three boys were present; also, a mother and her three little chil-

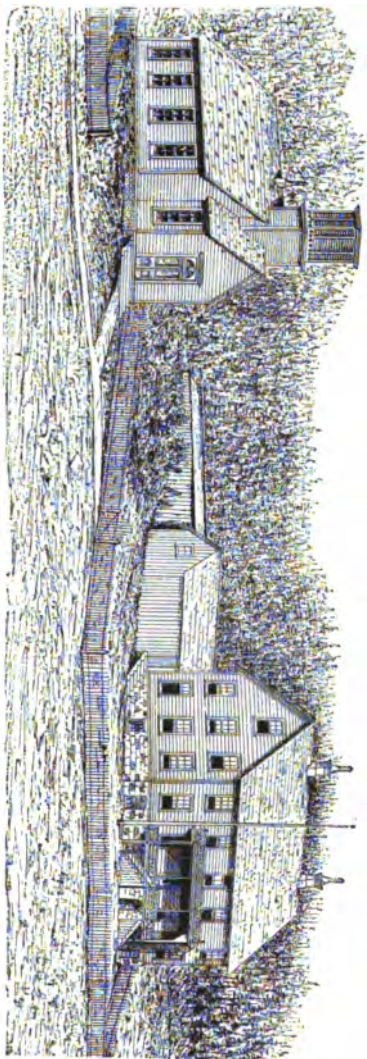
dren. As the women took their seats on the rough plank benches each one bowed her head in silent prayer, seeking divine help in her studies. Soon a thoughtful Indian man of about twenty-five years of age came in and took his seat behind the rude desk. The familiar hymn "What a friend we have in Jesus" was sung in English; a prayer followed in the Chinook jargon, which is the common language of the various tribes on this coast, closing with the repetition, in concert, of the Lord's Prayer in English. After lessons were studied and recited, the school arose, sung the long-metre doxology, and recited in concert the benediction. Then the teacher said, "Good afternoon, my pupils," to which came the kindly response, "Good afternoon, teacher."

The school was in full operation, but under great difficulties. They greatly needed maps and charts; they were also in great need of a school-house. At the time of my visit they were renting a dance-hall for a school-room. Upon the return of the miners for the winter, the hall had to be given up, and the school was held in a dilapidated log house. I found that their stock of books inventoried as follows: four small Bibles, four hymn books, three primers, thirteen first readers, and one wall chart.

Mrs. McFarland was at once placed in charge of the school, with Clah as an assistant and Mrs. Sarah Dickinson, a Christian Tongass Indian, as interpreter. Early in the history of her school, Mrs. McFarland found a difficulty in holding her girl pupils. According to the customs of their people, they were frequently hired or sold by their own mothers to white traders, miners, and others for base purposes. And the brighter the girl the greater her danger; for, as she improved in the school, she began to dress more neatly, comb her hair, and keep her person more cleanly; the dull, stolid cast of countenance gave way to the light of intelligence, and she began to be more attractive, and consequently in greater demand. To save these girls necessitated the establishment of a "home" into which they could be gathered, and thus taken out from under the control of their mothers. Consequently a home was added to the school in October, 1878, and kept in what was formerly the hospital building of the military post.

In July, 1879, I made my second trip to Alaska, in company with Rev. Dr. Henry Kendall, senior secretary of the Presbyterian Board of Home Missions. We took out with us Miss Maggie J. Dunbar, to take charge of the school, while Mrs. McFarland gave her whole time to the "home," which has since been named the McFarland Home, and has now 30 inmates, representing thirteen different tribes.

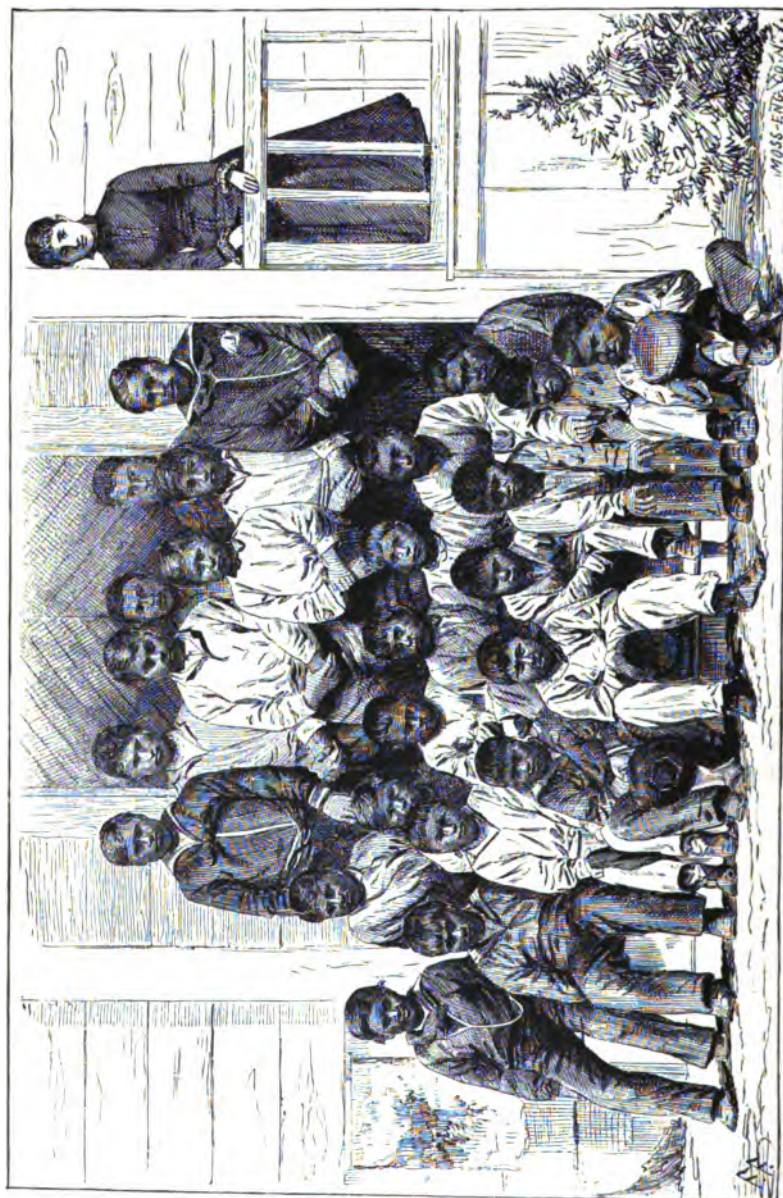
The average attendance of day pupils during the season of 1880-'81 was 60. This is now so largely increased that two additional teachers have been appointed. During the season of 1879 I provided for the erection of a large two-story building, with basement and attic, 40 by 60 feet, for the use of the home and school, which has since been completed at an expense of \$7,600. In August, 1878, Rev. S. Hall Young



Presbyterian Church and McFarland Home, Fort Wrangell, Alaska. [To face page 72.]







Sheldon Jackson Indian School, Sitka, Alaska.

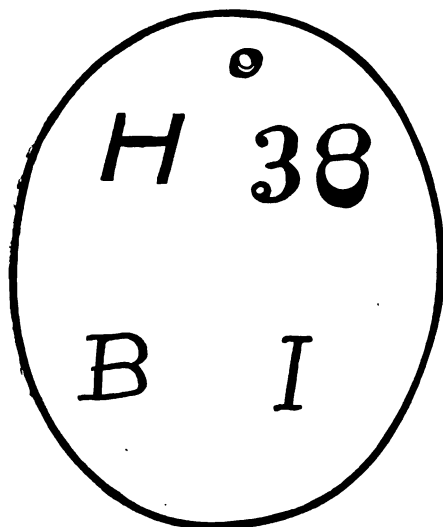
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was sent out to take charge of the mission church at Fort Wrangell. In June, 1879, Rev. W. H. R. Corlies and family reached Wrangell as volunteer teachers. Mrs. Corlies at once opened a school on the beach for the children of the visiting Indians, of whom there are sometimes as many as a thousand. These come from all parts of the coast for the purposes of trade. They see what is being done by the teachers and carry away the leaven with them. This school on the beach has exerted a very wide influence and created a demand for schools among several of the tribes. During the long winter evenings a night school has been carried on for the adults by Messrs. Young and Corlies.

Sitka schools.—In the winter of 1877-'78 I secured the appointment of Rev. John G. Brady for Sitka, and in April, 1878, a school was opened by Mr. Brady and Miss Fannie E. Kellogg. In December, through a combination of circumstances, it was discontinued. In the spring of 1880 Miss Olinda Austin was sent out from New York City, and reopened the school April 5 in one of the rooms of the guard-house, with 103 children present. This number increased to 130. Then some of the parents applied for admission, but could not be received, as the room would not hold any more. Miss Austin received the support and substantial assistance of Captain Beardslee, then in command of the United States ship Jamestown, who proved himself a warm friend of the enterprise. In July the school was moved to the old hospital building. In November some of the boys applied to the teacher for permission to live at the school-house. At home there was so much drinking, talking, and carousing that they could not study. The teacher said she had no accommodations, bedding, or food for them. But they were so much in earnest that they said they would provide for themselves. Upon receiving permission, seven Indian boys, thirteen and fourteen years of age, bringing a blanket each and a piece of tin for a looking-glass, voluntarily left their homes and took up their abode in a vacant room of one of the Government buildings. Thus commenced the boarding department of the Sitka school. Soon other boys joined them. One was a boy who had been taken out and shot as a witch, but was rescued by the officers of the Jamestown and placed in the school. Capt. Henry Glass, who succeeded Captain Beardslee in command of the Jamestown, from the first, with his officers, took a deep interest in the school. As he has had opportunity he secured boys from distant tribes and placed them in the school, until there are 27 boys in the boarding department.

In February, 1881, Captain Glass established a rule compelling the attendance of the Indian children upon the day school, which was a move in the right direction and has worked admirably. He first caused the Indian village to be cleaned up, ditches dug around each house for drainage, and the houses whitewashed. These sanitary regulations have already greatly lessened the sickness and death rate among them. He then caused the houses to be numbered, and an accurate census taken of

the inmates, adults, and children. He then caused a label to be made of tin for each child, which was tied around the neck of the child, with his



or her number and the number of the house on it, so that if a child was found on the street during school hours the Indian policeman was under orders to take the numbers on the labels and report them, or the teacher each day would report that such numbers from such houses were absent that day. The following morning the head Indian of the house to which the absentee belonged was summoned to appear and answer for the absence of the child. If the child was wilfully absent, the head man was fined or imprisoned. A few cases of fine were sufficient. As soon as they found the captain in ear-

nest, the children were all in school. This ran the average attendance up to 230 and 250, one day reaching, with adults, 271. In April Mr. Alonzo E. Austin was associated with his daughter in the school and Mrs. Austin was appointed matron. A fuller account of these schools at Fort Wrangell and at Sitka, together with the Indian schools in British Columbia, is to be found in a book published by Dodd, Mead & Co., 755 Broadway, New York City: *Alaska, and Missions on the North Pacific Coast*.

Russian school at Sitka.—In the fall of 1879, through a private effort made by Captain Beardslee, the officers of the United States ship *Jamestown*, and the citizens of Sitka, a school was opened by Alonzo E. Austin for the white and Russian children, with an average attendance of 45 to 55. When, in the spring of 1880, Mr. Austin went into the Indian school, he was succeeded by his second daughter, who left in August to teach an Indian school among the Hoonyahs. Miss Austin was succeeded by Mrs. Zechard, who is now in charge.

Takoo.—During the summer of 1880, Rev. and Mrs. W. H. R. Corlies carried on a temporary school among the Takoos.

Haines.—In the summer of 1880, Mrs. Sarah Dickinson, a Christian Tongass Indian, was sent to open a school at the store of the Northwest Trading Company, among the Chilkats, at the head of Lynn Channel. During the past summer I erected at that point a residence for the teachers and provided a school building, leaving Rev. E. S. Willard, of Illinois, in charge, with a flourishing school of 65 pupils.

Boyd.—During the past summer I erected a school-house and residence for the teachers in the principal village of the Hoonyahs, on

Cross Sound, and left Mr. and Mrs. Walter B. Styles, of New York City, in charge of the school. The attendance is from 70 to 80.

Hydah Tribe.—At Jackson, near the southern end of Prince of Wales Island, the chief presented me with a good native house, which I altered over and repaired so that it will answer very well for a school this winter. Next season I hope to build there also. The teacher is Mr. James E. Chapman, of Ohio.

In all these schools the English language is taught. The above five schools in the Alexandria Archipelago, with the small Russian schools at Unalashka and Belkovsky, and the two schools of the Alaska Commercial Company, on the Seal Islands, comprise all the schools in Alaska, leaving a population of fully 20,000 without any educational advantages whatever.

As Alaska is the only section of the United States where governmental or local aid has not been furnished for schools, it is but justice that the friends of education should press Congress for aid.

Then, as American citizens and educators, feeling ashamed that any section of our land should be worse off educationally than when under the control of Russia, having failed to continue the schools that for many years were sustained by the Russian government, we should join in indorsing the request of the National Bureau of Education, which was approved by the honorable Secretary of the Interior and on the 15th of February transmitted to Congress in a special message by the President, asking for an appropriation of \$50,000 for education in Alaska.

At the conclusion of these remarks, Mr. SHELDON offered the following preamble and resolution; which were adopted unanimously:

Whereas the native population of Alaska have alone of all sections of our common country been overlooked in educational provisions; and

Whereas the President has sent to Congress a special message asking for an appropriation of \$50,000 for education in Alaska, to be disbursed through the National Bureau of Education: Therefore,

Resolved, That this Association earnestly requests from the Committees of Education and Labor of the Senate and House of Representatives a favorable consideration of the above request.

The text of the second paper presented, by W. W. Godding, M. D., Superintendent of the Government Hospital for the Insane, is as follows:

A WORD WITH TEACHERS FROM MY STANDPOINT.

GENTLEMEN: You take the mind young and fresh in life's morning and send it, aspiring to become godlike, on its upward flight; I receive it torn and bleeding as it comes fluttering down; is there anything in common between our studies that I should ask you to pause for fifteen minutes in the important labors of your session to listen to me? I doubt it, unless you consider it in the light of a fifteen-minutes recess. How shall I teach the teachers? The germ of insanity lies back of the

education, and I question if the inexorable law in nature which we know as that of "the survival of the fittest" will not, in spite of any or all education, send a considerable per cent. of weak brains to moulder and become moss-grown within asylum walls. This seems but a reasonable deduction from the facts within my own observation; but then I reflect that the sources of life and reason are not in our hands; I know how a little more or a little less of that subtle something we call common sense makes the difference between the wise man and the fool; remembering, too, how a sage physician, by a sudden flash of sunlight thrown from a mirror upon an idiot boy in a darkened room, awakened a gleam of intelligence, disclosing a mind where it had hitherto been supposed to have no existence, I realize what teaching in the hands of a master may accomplish; then, standing among the melancholy ruins where my studies bring me, I think that perhaps a different education would have spared a father's anguish for his only son, could have saved this demented girl

To have been some man's delight,

might have still kept eloquent that drivelling tongue; and so I am here.

From my standpoint the first mistake that we make in the education of the young is that we do not pay sufficient attention to the temperament of the child; we are not all cast in the same mould, even if we do bear the same image. This lethargic youth, whose mental integuments are like the wrappings of a rhinoceros, needs all our goading—a brain fever is hardly possible to such an organization; but this girl, with clear skin, spare neck, intellectual forehead, and speaking eyes, whose lessons are always perfect, whose answer anticipates almost your very thought, whose nervous susceptibility quivers through every fibre if she fancies your reproach of the above-mentioned blockhead is meant for her—it is not study out of school that she requires, but the gymnasium, the rest of long vacations in the summer fields, with nights of repose unbroken by any dreams of school prizes. I know oftentimes your bright scholar is such an oasis in a desert of abounding dulness that there is a strong temptation to the teacher to give him free rein; hence it often occurs that your valedictorian is never heard of afterwards. It is staying power that you want more than brilliancy of mind.

Are we not asking too much of our children? Lay the foundations broad—the broader the better—in physical health, and let the mental growth be natural without forcing. I like the open-air summer schools; even in our climate we should be gainers with more of the outdoor life of the old Greeks; I wish we had again the forum and the grove of Academia; in such schools our children would gain in vigor to more than counterbalance their loss in the exact methods of book teaching. Yes; the advance in all kinds of knowledge is something wonderful. They tell me it is necessary that my son should begin at

the age of seven to fit for college, if he is to enter Harvard; it is true he begins to shed his milk teeth at that time, but he will only see of Harvard the outside of the buildings, for, college or no college, I do not intend to make him the last of my race. You say, and probably truly, that the student now must know more when he enters college than I did when I graduated, and, I may add, than I ever have since. And what do you accomplish by crowding all this accumulation of wisdom into one little brain? Why, you have increased the cerebration, you have intensified the nervous action, but you have not enlarged the cranium, or, if you have, the chances are you have done so at the expense of the physical vigor.

But you say by our education we have moved forward the limit of the individual life. For thirty centuries, and I know not for how much longer, the Psalmist's three score years and ten have been the inexorable horizon of earthly existence; we cannot change this, but we do practically extend it by enlarging its vista; our life keeps quick step to the wonderful march of science; we ride with the storm, we write with the lightning, we paint with the sunbeam; everything is by the instantaneous process. As Poe said of the singer Malibran, "She crowded ages into hours; she left the world at twenty-nine, having existed her thousands of years." I grant you, if this were the final age, nothing could be more desirable; if this was the closing scene and no coming time, no children to inherit our exhausted vitality and to call us anything but blessed.

In a bookstore, the other day, the first volume that met my eye was entitled *A New Form of Nervous Disease*. New form? Why their name is legion. A treatise on the neurotic disorders now makes one of the largest works in a physician's library. It is an age spendthrift alike in brain and in material. Of the heat and power that have been slowly accumulated in the coal measures through the eons of geologic time, which would last with careful consumption for myriad generations, we take 2 per cent. for our purpose, sending the remaining 98 per cent. to be dissipated in warming interstellar space. To the charge of wasteful expenditure, modern science answers that future generations can make available the energy of the tides and keep warm by electricity stored up in reservoirs whose feasibility is even now being demonstrated. They will need it, for our ruthless destruction of the forests will not even leave them the luxury of a wood fire. Yes, power is convertible into everything short of mind, but that I doubt. The "Promethean heat" once exhausted, the vital energy of a race destroyed, science, that tells us so much, knows of no way to restore it, and history points us only to the Huns and the Goths.

The danger to our civilization to-day lies in the direction of nervous exhaustion. I know that those who believe that we are just on the dawn of an intellectual and a material millenium will smile at this, and they will tell you that never in the history of the world was there a higher

manhood, or a time when the individual man was so grandly cared for and had such possibilities as at present. The world, in its successive epochs of civilization, has always shown a culmination of prosperity and an intellectual blossoming just before its decline. Witness the Augustine era and that age of gold of Spanish conquest and renown. This is the age of brain; the marvellous discoveries of science are utilized to intensify our struggle for wealth, for vantage ground, to make all the universe tributary to the little span of our human life. The luxuries of the last generation have become the necessities of this; wealth is only relative, and power never brings content; there is a constant increment of strain, and woe to the brain that goes halt or maimed into that battle.

Do you say this is the mere vagary of an alarmist, the Cassandra-like cry that finds no believers? Ah, but while it was in the infinite decrees that Cassandra should not be believed in that fated city, none the less did the divine afflatus compel her to prophesy, none the less were her forebodings true. Do not understand me to mean that our school education is responsible for all this; no, not even for any considerable part of what we are pleased to call the spirit of the times; but what I do say is that it is the duty of the teacher, instead of drifting with the tide and accepting the tendencies of the age as something inevitable and not to be overcome, to stand up in the dignity of his great office, and of his manhood, and call a halt to this on-rushing madness, and to so instruct the coming generation, the youths who shall take our places, those who "shall be kings hereafter," as to lead them into a "more excellent way." In truth, we are sponsors for the future as well as possessors of the present, and are morally bound to transmit this earth, which is ours to-day, and the vigor of this human life, which for a span we hold, unimpaired to those who in the endless procession shall come after us, as the miller may use the water in the river to turn his wheel and pass it on to another, but has no right to divert the channel or poison the stream.

This brings me to what I have to say on heredity, a subject which concerns you as educators in the broadest sense, not of children alone but of communities. Just now, for the purposes of a certain trial, the newspapers, those blind Samsons in the cause of popular education, have given out that there is no such thing as hereditary disease, that the most eminent experts have so stated. Well, what my brethren, who stand away up at the head of the class did say, trying to be very exact in the use of language, feeling that they were under oath, was, that the tendency to insanity was hereditary, not the disease itself. "The rose by any other name,"—but in common parlance we say, and properly say, hereditary disease; and where a great truth is involved we cannot afford to be misled by any subtleties of exact definition. And here I take occasion to say, in answer to this newspaper dictum, that the hereditary character of insanity is a perfectly well established fact in medical science, and is recognized as such by the profession, and that, acting as the remote cause, hereditary predisposition has probably more to do with the

development of insanity to-day than all the assigned immediate causes put together. "Visiting the iniquities of the fathers upon the children unto the third and fourth generation" is not a mere metaphor of oriental language, it is a fact; it was true three thousand years ago, it is true now. We say this child does not learn because he has no head, but the real trouble is the father was acephalous before him; what a thousand pities such a father ever had a son; the fool-killer was an important agent in the twilight dawn of civilization which we miss at its noonday. From Lyncurgus to Christianity is an immense advance; he cared for the race and forgot the individual; but may we not be in danger of forgetting the race entirely in our care for the individual? Christianity came down from Heaven with its divine mission to the poor and the outcast, and its promise is that "the meek shall inherit the earth," but should we not draw the line at defectives, and stop the intermarriage of the insane?

Impress upon those who look to you for instruction and guidance that, while in their tender care and sympathy for these unfortunates they will do well to imitate the divine compassion, they shall, as they value the integrity of the race, in their pity stop short of marriage. It is time that the laws which govern heredity were taught in schools other than medical. Sins against the physical no less than those involving the moral nature are far reaching in their effects. Ah, what a moral teacher vice becomes when we see its last stages in a hospital! Sometimes I think I will open a school, for though I am but little of a preacher and less of a teacher, my hospital could furnish a Kindergarten with some striking object lessons. Contemplating the misery resulting from hereditary disease alone, looking on these pitiable wrecks where vice and degeneracy, insanity and scrofula, have left their blight on faces more eloquent of the truth of the inheritance of sin and the wages that it brings than any poor words of mine can be, I wish I could take the young men just breaking ground for the planting of their wild oats, and let these silent teachers speak to them! We sow the wind; "ah, what shall the harvest be?"

No, you do not need to remind me how easily, when its passions are involved, the world forgets the lessons of its philosophy, and as a physician I do not expect to recover Love from his blindness, but all the more I recognize how far up in "the glorious procession of saints and martyrs" some souls will hereafter stand whose lives like their devotions have been single, whose silent purpose has been that the inherited taint of their blood should die out from the world with them. And we have seen in them only single men and women, who being so much occupied in doing good had found no time "to marry or be given in marriage," and so left no children to inherit their many virtues. But perhaps the Great Teacher saw those lives otherwise, and had such in mind when he said for our instruction the words that we are inclined to hurry over as we read, "And some have made themselves eunuchs for the kingdom of

heaven's sake." Too much already the race is poisoned with hereditary taint; yes, as we use language, there is such a thing as inherited disease; it is a sin to conceal it; to deny it is a crime.

The fifteen minutes, for which I thank you, are over. This is indeed a weird paper for teachers, as much out of place with its detention as that of the Ancient Mariner to the wedding guest; but if you censure it from the educational standpoint my apology must be that I have erred with the old Athenian teacher who exhibited a drunken man to his children as a temperance lecture.

Dr. JOHN M. GREGORY was next introduced, and read the following paper:

SOME FUNDAMENTAL INQUIRIES CONCERNING THE COMMON SCHOOL STUDIES.

Are the studies of our common schools wisely chosen? Are the seven branches universally taught in our common schools, and which constitute the sole work of many thousands of these, such as an intelligent parent or teacher would select out of the wide range of knowledge for the whole school learning of many millions of our people? In other words, are spelling, reading, writing, arithmetic, geography, and grammar, and occasionally the history of the United States, worthy to fill the entire time of tens of thousands of schools and to absorb the whole school life of a large majority of our children? Questions of greater apparent dignity may come before us, but none of wider practical import. They may seem to some to have a hint of radicalism, or even of revolution in them, but that is not to alarm us. Human civilization has advanced by the abandonment of old errors and superstitions as well as by the discovery of new truths.

It is time to question our educational theories and processes to the bottom. If they are true and right, we want the proofs; if they are false and wrong in any respect or degree, we ought to know it. While the National Congress, oppressed with a new sense of the immense difficulties and dangers which hang over some portions of the Republic, are discussing with a breadth of view never before exhibited projects of national aid to education, the professional educators of the country, the men whose life-long familiarity with educational affairs has made them experts, may well be asked to reëxamine every question which may concern the work to be done or can practically affect results. And, certainly, no question more nearly concerns that work than the work itself, the education to be given. Why ought these seven studies to be taught, these more than others, and especially these in place of all others? Who selected these studies at the outset? And, if wisely chosen then, do they remain the best to-day?

Many and serious complaints have been made, and sometimes in high quarters, against the meagre products of our common school system, and

though much of this complaint is prejudiced and unreasonable, he is a bold man who dares say that the school system is accomplishing all it ought and all we may rightfully expect. What if a mistake lies at the threshold, and the work undertaken is not precisely the work we need to have done? If our 270,000 teachers have been set at the wrong work or the right work in a wrong way, is not a partial failure certain and unavoidable?

No one will claim that it is a matter of indifference what studies shall be taught and learned in the people's schools; and it is as little to be claimed that the extent to which each study shall be carried is a matter of no importance, since any one study may be expanded into the labor of a lifetime.

THE CHARGES AGAINST THE COMMON SCHOOL STUDIES.

It is of the seven studies as they are taught in the common schools of the country district that I wish to speak. In the graded schools of the more populous districts and in the villages and cities, much change has been made for the better; and to these much of my criticism will not apply.

There are three distinct counts in the indictment which may be brought against these studies:

First. They found their way into the schools by accident, and without the intelligent choice of a person competent to select them.

Second. Having gained their admission to the school, they have, from the undue multiplication of text books, monopolized the school life of our children, to the exclusion of other equally important studies.

Third. They give no adequate return for the time spent upon them.

PROOFS OF FIRST CHARGE.

The proof of our first proposition can be furnished by many of our older citizens, who recollect the school of their childhood. Indeed, but little proof is needed, for I have never heard it claimed that these studies were duly selected out of the wide range of human knowledge as embracing things the most important for children to know or as furnishing the mental exercises most suitable for childhood. The most that can be said in their favor is that they have such a degree of utility that, having gained admission, they have kept their place, and may now properly claim to occupy some share of attention in the school work. Certainly no one in the careful and intelligent review will pronounce them the only studies needed by the mass of the people.

But, though not intended for proof, a brief historical statement of the way in which these studies entered the school will allow us to criticise them with more freedom.

READING IN COMMON SCHOOLS.

The earliest common schools, or schools for the common people, had for their chief end instruction in the art of reading, in order to enable

the people to read the Bible and the psalm book. Such were Luther's schools and the parish schools of England. Orthography came with reading as a necessary step in learning to read. These two studies may, therefore, be counted as having had a legitimate introduction, since the schools were organized in their behalf. Against these our first charge does not especially lie. Nor against writing, which came in as an adjunct of reading, with similar practical uses. These three, indeed, are not sciences, but simply literary arts, which give the mastery over written language. As preliminary to all book learning, they are properly in the schools. To read one's lesson is necessary in order to learn it.

Our second and third counts lie against them with full force. Reading and spelling occupy an undue share of time in the common schools, a proportion of time wholly unnecessary to the proper learning of them; and they afford no adequate return in the knowledge or culture given for the time so occupied. The reading lessons are not stopped when the pupil has become able to read (as Luther would have had him) his Bible and hymn-book, nor when he can read (as we would have him) his text books and the newspaper besides. They continue to go on year after year, filling up in the common school fully one-third of the scant time of the teacher and using up a nearly equal proportion of each child's school days. Long series of readers, made up of scraps of literature, follow each other in seemingly endless procession. Spelling keeps its place beside its sister art, and through the years the pupil passes along the columns of selected words vainly attempting to fix in mind the characters of which they are composed by dint of repeating the names of those characters.

And after all this enormous waste of time and money, the number of pupils who learn to peruse with easy and critical intelligence the columns of the next newspaper or the books they have occasion to consult, or, going beyond the mere silent perusal, are able to render the thoughts of the writer into clear articulation, with proper inflections and emphasis, is very small, and, small as it is, is made up chiefly of those who did not learn by reading in school, but from the private perusal of books furnished them at home or through the Sunday schools.

Spelling, the adjunct of reading and writing, shows a still poorer record and result. The common school pupils are few who in later years can spell correctly even the words in common use, or can write, save in scrawls almost illegible.

It is but fair to state that the reading lessons may be and are sometimes made, by intelligent and skilful teachers, the medium of much valuable information and culture. Under such teachers, the reading lesson teaches history, geography, grammar, language, literature, science, morals, and a hundred things besides. The reading class becomes a school in itself, a school of universal knowledge; but it would be unreasonable and unsafe to expect the ordinary common school teacher to

do such work as this. Only the most gifted and those of ample reading and wide scholarship can thus make one branch of learning an open door to all others.

ARITHMETIC IN SCHOOL.

If now, from the studies which relate to the mother tongue, and which we have agreed have their rightful place in the common schools of the people, we pass to those claiming attention as knowledges, the question as to their value and rightfulness of choice would seem more pertinent. Let us take, first, the most universally studied and most appreciated of the remaining studies, arithmetic. This now holds so high a place in the public esteem that many will be surprised to learn that within the memory of living men arithmetic was not allowed to be taught in some common schools of New England. It is true, as we learn from Governor Winthrop's Journal, that "divers free schools were erected, as at Roxbury and at Boston, where they made an order to allow fifty pounds to the master, and an house and thirty pounds to an usher, who should also teach to read and write and *cipher*." Ciphery to the extent of the four rules seemed needful to them, but it was far from being a common study in the common schools till more than a hundred years later. A writer in Barnard's American Journal of Education relates that the officers in some districts allowed evening schools to be established for teaching arithmetic, but refused it admission among the day school studies. At a still later day, and within the memory of many of us, it was studied for the main part only by boys and young men. Many of the girls neglected it entirely or learned only the four simple rules. It made its way to favor from the feeling that it was in some way connected with our business affairs and would help men to make and save money. No one thought of establishing any comparison between this simple art of numbering and other fields of knowledge, either to ascertain its value in the information it gave or in the discipline it afforded, or to determine how much time it should have.

I do not need to pause here to prove how erroneous or exaggerated the ideas of its value now so widely prevalent. These will sufficiently appear in our future discussion.

THE GRAMMAR STUDY.

English grammar came still later into the common school course, and for a long time held only a narrow space in that course as a study for the more mature and advanced pupils. In the outset it was introduced by some occasional teacher, who, having spent a term or two at the academy or at college, had learned Latin grammar or that strange English grammar borrowed almost bodily from the Latin, and who felt ambitious to show his learning, or, perhaps, benevolently concluded to extend it to his older and brighter pupils. From an occasional study, it became, in time, a regular one, and was extended from the few who first attempted its mastery to nearly the whole body of the children.

The idea of its usefulness to teach correct speech was in after years thought of and made a reason for retaining the study in the schools.

GEOGRAPHY CALLED TO ACCOUNT.

Very many are now living who can remember the first introduction of geography into the circle of our common school studies. I recall now a certain small but thick octavo volume, with a single map of the world folded in opposite the title page, which bore the name *Morse's Geography*. It was occasionally brought to the winter school by the big boys and girls, and when they had exhausted the reading lessons of the *American Preceptor*, the *Columbian Orator*, and the old *Third Part*, they resorted to this geography as a reading book. The poor map was speedily disposed of as an unnecessary incumbrance, and the descriptions of the boundaries, characteristics, productions, &c., of the several countries were read as interesting facts. Occasionally classes would be formed to learn and recite lessons from these mapless geographies, till at length some bookmaker, seeing the chance of introducing a new text book, provided us with geographies fitted up with maps and furnished with innumerable map questions, sufficient to occupy our time for several years. The study became common, and now ranks among the universal requirements of our common schools. Surely no one can claim that the intelligence of school boards, or of wise parents, or of anxious and far seeing teachers selected this from the round of human knowledge and accomplished its introduction on the ground of its superior utility, either as a knowledge or as an exercise of the mind. Entering by accident, it owes its continuance to the enterprise of bookmakers and book publishers. Such is the simple history of the origin of our common school studies.

THE TESTIMONY.

From some articles on "the schools of sixty years ago" in *Barnard's American Journal of Education*, volume 13, we extract the testimony concerning the early schools of New England given by some well known citizens and educators. Noah Webster writes: "No geography was studied before the publication of Dr. Morse's small books on that subject about the year 1786 or 1787." "Before the Revolution and for some time afterwards, no slates were used in the common schools; all writing and the operations in arithmetic were on paper. The teacher wrote the copies and gave the sums in arithmetic, few or none of the pupils having any books as a guide." "No English grammar was generally taught in common schools when I was young." Dr. Webster says the books commonly used in the schools in those days were the Bible, the Psalter, and the spelling book.

Dr. Heman Humphrey, president of Amherst College, wrote in regard to the common schools in his childhood: "The branches taught were reading, spelling and writing. Grammar was hardly taught at all in

any of them, and that little was confined almost wholly to committing and reciting the rules. Arithmetic was hardly taught at all in the day schools. As a substitute there were some evening schools in most of the districts." Hon. Joseph T. Buckingham wrote in his recollections of the common schools of his time: "Reading, spelling, and a little writing were all that was taught." He says a more enterprising teacher at length came and taught some arithmetic.

A. Bronson Alcott, in an article on the schools of his time, *American Journal of Education*, 1866, says: "Until within a few years no studies have been permitted in the day school but spelling, reading, and writing. Arithmetic was taught by a few instructors one or two evenings in a week. But in spite of a most determined opposition arithmetic is now permitted in the day school, and a few pupils study geography." Much more such testimony might be quoted from the same and other sources; but this is sufficient to confirm my statements as to the origin or introduction of these studies.

It may be claimed that a general recognition and feeling of their importance has been at the bottom of the general use of these studies. Certainly their advocates have used no little eloquence and ingenuity in their attempts to urge upon pupils and parents their great importance and the very valuable results to be secured by these studies. We shall see further on whether these arguments have been founded on facts and have proved good in use.

SECOND COUNT IN THE INDICTMENT.

Our second charge that these studies have monopolized the time is sufficiently evident and is the more aggravated by the large increase of school time thus monopolized. Within the past twenty-five years the average school term of our rural districts has increased from five or six school quarters to as many years. It was, perhaps, no wonder that the mastery of the few reading books and of the more simple parts of arithmetic should have occupied the three or four scattered terms spent in school. But with the increase of wealth, and the multiplication of schools, and the higher public appreciation of education, the school terms increased, till now many children, beginning at five or six years of age, attend both summer and winter sessions five or six years and then during the winter sessions for as many more. The school life has been increased to fully five times its former length, and with this increase has come, not an increase in the number of studies, but in the number of text books. Where in former times we had a single text book, we have now a series, and the series is lengthened out by additions both to its upper and lower ends, until it is ready to cover the entire time of the child's stay at school. Thus, arithmetic is presented first in a little book half filled with pictures of objects to be counted, added, and subtracted. There are added to these primary arithmetics, mental arithmetics, practical arithmetics, grammar school arithmetics, high

school arithmetics, and philosophical arithmetics, furnishing applications of numbers to everything on the earth, in the heavens above, and in the oceans that surround us. Rules are multiplied upon rules, new and cunning processes are invented to secure the same result, until enough is provided to occupy the mind of the average student from childhood to ripe years. Certainly very few of the students ever succeed in completing the books.

In grammar the history is the same: grammar in primer, grammar in twelve mo's, grammar in octavo, grammars of diagrams to teach little children the mysteries of speech, and grammars full of great philological discussions. The apparent aim of the authors has been to meet the child with grammar on his first entry into the school and not to leave him destitute of a grammar to study till his last day in school. What shall we say of the geographies, extending from the picture primer through the long drawn series to the huge high school volume and the great treatise of physical geography? The pupil is required to travel in fancy, and with unaided imagination, over the whole broad earth, and to learn the names and locations of towns, rivers, bays, capes, and islands as endless as they are insignificant. Scarcely any attempt is made, and certainly no attempt is availing, to give any definite notion or any interesting knowledge of the numberless places learned. They are seen as little ink spots, sprinkled over the gaudy colored map, with hard, unpronounceable names, and overloading the memory to such an extent that it breaks down under the burden and empties the whole mass of its acquisitions into the dead sea of oblivion.

If now we go to the school room and ask for the introduction there of some studies which may teach the child the knowledge of himself, of the body he inhabits, of the world he lives in, of the myriad forms of life, of being around him, we are met instantly with the cry "We have more studies already than we can teach." How can the child be expected to learn the place or use of his lungs, his stomach, or his liver till he has finished geography, has learned the last town in Siberia, and all the rivers in Patagonia? Would you have him study the plants from which he derives his daily bread, which beautify his home, which shelter him, which furnish him with the material of his arts, you are met with the unanswerable assertion "Why, he has not yet completed his arithmetic!" Thus these studies have come to stretch their lessons over the school life and to exclude all chance of other studies in the common schools.

THE THIRD CHARGE.

I advance now to the third count in this indictment of the common school studies. It is charged that they give no adequate return for the time that is consumed in their study. Having crept into the schools at nobody's behest, except that of some casual teacher, or perchance of the bookmaker, and having continued to expand till they have filled the expanding school life of our American children, they leave these

children to go forth at last from their schooling with returns so meagre, with knowledge so imperfect, so destitute of power and skill, that one may almost raise the question whether the fruitage of school life repays this expensiveness of cultivation. The charge here made involves three distinct parts:

First. Those studies do not make intelligent men and women. They are not capable of producing intelligence. In this respect they are poverty stricken. Could all the people learn these studies of the common schools and learn nothing more, we should never become an intelligent nation. A study in order to produce intelligence must furnish food for thought; it must offer ideas which stimulate and excite mental inquiry, and it must give knowledge which throws light upon ordinary questions of life. It must hold such vital connection with our every day doings and our every day observations that it shall be called constantly into exercise to explain the phenomena, to solve the problems, and to throw light upon the duties which daily meet us.

ARITHMETIC CHALLENGED.

How many such fruitful and stimulative ideas does the arithmetic give? How often is it made the topic of conversation by friends as they meet to pass a social hour? What mind is set in motion by it and attracted into fields of fruitful thinking? What light does it flash upon our common experience, and how far does it serve to solve the great questions of moral, social, and political duty which each soul encounters in its progress through life?

Indeed, arithmetic, as it is ordinarily studied and taught in country schools, is little more than the guessing of so many riddles. The study of the rules and of the principles is pursued only far enough to enable the pupil to perform the examples under them. He studies the rule as a direction for the performance of a set of sums, not as a law of numbers. And having learned the trick of solution under any given rule, the pupil hastens to cipher out all the other examples under the rule by the same formula. When the book is completed he is simply prepared to turn back and to begin and repeat the process. And when a young man twenty years of age comes to the college or university examination, he asks if it would not be better for him to review arithmetic once more. The examination teaches him that he has learned nothing of its principles, that he has studied it in vain.

GEOGRAPHY NON-PRODUCTIVE.

In geography the case is still worse. In the ordinary methods of instruction it is reduced to a sort of game of "hide and seek" on the maps; crooked ink marks running here and there are learned as rivers; black dots stand for cities; fringed lines represent mountains, and the pupil wastes weary months in learning that one dot with an unprounceable name lies in this corner of the map, another in

that; that the river lines begin at one point on the map and end at another, and often without the faintest conception of the real nature or location of the country that he studies and with no idea at all of the cities, the seas, the islands, the lakes, the mountains, the harbors, whose location on the map he learns.

Thus the pupil loads his memory with useless lumber. It stirs no thought but that of weariness of the lesson. It brings no inspiration; it throws no light; it answers no question. It is simply an interminable catalogue of names of places never, perhaps, seen or to be seen or heard of, a catalogue which fades from memory in a tithe of the time that it took to learn it.

Who is there among us who in travelling or in trading dares trust for his directions to the geography that he learned in his childhood in the district school?

The great principles of mathematical and physical geography, the construction and use of maps and charts, the movements of our globe and the consequences of these movements in the changing seasons; the physical conformation of the continents and its influences upon climate, productions, and human life; historical and commercial geography, with their living interest; the great cosmical facts full of wonder and full of use—these might indeed stir thought and widen out the intelligence; but these are not and perhaps cannot be included in the study for children of the tender years in which geography is commonly taught.

As in the case of reading, so in geography, some teachers of wide reading, extended travel, and much learning have succeeded in making the geography lesson the vehicle of all kinds of information, historical, commercial, and scientific, and the study in their hands seemed rich and productive, but the riches were furnished from their own stores. It would be in vain to ask such teaching from the average district school teacher.

IS GRAMMAR ANY BETTER?

If you turn to grammar the case is no better. Who ever heard grammar made the subject of conversation, unless it was in a company of teachers? Whom does it stimulate to useful thinking unless it be some pedantic scholar? How far does it enable men to understand the daily phenomena of life or settle wisely the great questions of daily interest? Even in speech, the most useful and the most used of all our arts, how much does grammar contribute to our successful mastery of it? It is notorious that some of the best scholars of the grammar classes still talk in the incorrect phrases of their childhood in spite of their knowledge of the rules of grammar. As taught in our country schools it is not the study of language, but the study of parsing and criticism.

We conclude, then, and the conclusion is as certain as it is sad, that the seven common school studies alone and unaided by supplementary

instruction lying outside of their own scopes and text books are not and cannot be sure sources of public intelligence.

SECOND CHARGE UNDER THE THIRD COUNT.

Our second charge is still more serious. These common school studies do not fit their pupils for the ordinary avocations of life. The farmer's son who has filled his seat in the district school in his district summer and winter for eight or ten years does not carry to the field one item of knowledge which enables him to understand any better the soil that he cultivates or the processes of its cultivation. The mystery by which the brown earth builds from the tiny seed stalk and flower and fruit, is to him as much a mystery as ever. His arithmetic, grammar, and geography, his lessons in reading and writing, have not told him one single law that rules in the vegetable and animal kingdom with which his business is henceforward concerned.

Even his own life is a mystery to him, and his own body an unknown world.

The arts by which he is to live and gain a support for himself and family are utterly foreign to all that he ever saw, or heard of, or studied in the little school-house where he spent so many toilsome months and years. The rules of arithmetic give no facility in comprehending animal life as seen in the faithful domestic beasts which serve us or in the noxious vermin which destroy our gardens and our goods. Grammar gives us no aid in preparing or analyzing our food or in accounting for the state of our health. And the geography of the world without furnishes us with no map of the world within us.

But why follow further this discouraging detail? We speak of what is, and not of what need be. Who does not know that common school knowledge and practical knowledge are things as distinct as grammar and grasshoppers. The popular voice has long since pronounced its verdict upon this matter, and men withdraw their sons and daughters from the schools when they deem it time to teach them the practical arts and duties of life. As Herbert Spencer says:

That which our school courses leave almost entirely out, we thus find to be that which most nearly concerns the business of life. All our industries would cease, were it not for that information which men begin to acquire as they best may after their education is said to be finished. * * * The vital knowledge, that by which we have grown as a nation to what we are, and which now underlies our whole existence, is a knowledge that has got itself taught in nooks and corners, while the ordained agencies for teaching have been mumbling little else but dead formulas.

THIRD CHARGE UNDER THE THIRD COUNT.

But thirdly, and finally, if these studies do not of themselves make intelligent people and do not of themselves fit their students for the avocations of life, perhaps they are useful to prepare for further studies, for higher education. No; here again they fail. The complaint from the whole range of all the higher schools, the colleges, medical and law

schools, polytechnic schools, and universities, is that the common schools do not prepare the student to enter upon the higher courses of instruction, do not indeed work in that direction. Neither the subjects nor the methods of study fit the common school pupil for any advanced course. The ordinary student of arithmetic has found but little to help him in the higher mathematics. Geography helps to little or nothing beyond, and English grammar as taught furnishes scarcely the starting point for higher linguistic study in his own or in other languages.

In the great fields of science, of chemistry, of physics, of natural history, of philosophy, even the alphabet, the simplest notions and definitions, have to be learned by their students without the slightest aid from common schools. One chief difficulty that is felt in teaching these sciences in all the higher institutions is that their students are unacquainted with the simplest language of science. Weeks and even months must be expended in giving to the student of botany, astronomy, &c., the simple elementary notions and names which must be known before he can enter upon the study of the science itself, though these are as easily mastered by the child as the name of grandmother, and are mastered by many children of intelligent parents.

CAN BETTER TEACHING BE EXPECTED ?

Now, to all this it may be replied, and doubtless will be by many, that the difficulty is not in the common school studies themselves, but in the methods of teaching them; that when we shall get a better generation of teachers, more thoroughly prepared for their work, whose methods shall be more perfect and whose labors shall be more systematic, this objection will be obviated and better and richer results will be obtained. Such indeed has been the plea for more years than I can remember, and able superintendents and normal teachers have set themselves earnestly and diligently to the task of training up such a body of teachers. But ought not the very difficulty of obtaining this better generation of teachers (the impossibility indeed, that seems, thus far, to have hindered all efforts to train up the requisite number of teachers) to suggest to us the possibility of another conclusion? Let us admit that better teaching brings better results, as is often shown in our graded and city schools. But may it not be that these common studies themselves are so poorly adapted to the child, so unfitted indeed for the common mind and the common circumstances of the most of our children, that fit teachers will rarely be found, or even if found will never attain more than partial success? Must they not succeed, if they succeed at all, by what they add to the studies rather than by what they find in the studies themselves?

Is it not time to seek the solution of the great problem before us in some other direction? Failing to elevate our common schools along this path, may we not be more successful by choosing another? If the teaching of those branches is so commonly defective and scholarship

in them so difficult or so unattainable, may there not be other studies more easily taught and more rich and useful when taught? May we not select a course of studies for our common district schools which shall more nearly meet the natural tastes, capacities, and needs of childhood, which may engage and quicken the native activities of the pupils, and, rousing them to some natural eagerness of pursuit, make their progress and final success to depend less upon the stimulating power and aid of the teacher? And if this new course of studies shall be found also more interesting to teachers, more easily mastered and used by them, will it not also lighten the work of preparation and offer an easier solution to the great scholastic problem of a sufficient force of qualified teachers?

To answer this question of a wiser course of studies for common schools, we must note more fully and carefully the object of all education.

THE TRUE AIM OF EDUCATION.

The great aim of education is, and of right ought to be, the same as the great aim of life. If this aim is simply and solely that of discipline, then the aim of education is discipline. If the aim of life includes the acquisition of knowledge, then education should also include this. And if the great aim of life goes beyond both discipline and knowledge, if it involves the activities of life, its pursuits, its employments, and the whole round of its performance, then education should embrace all these. Both discipline and knowledge are doubtless involved as the necessary conditions of this higher aim, but only as conditions. Discipline has as its end the development of both strength and skill; knowledge has as its object both the nourishment and illumination of our minds. And as our several employments necessarily involve both skill and strength on the one side and intelligence on the other, so they require as a condition of their success a subordinate training and study from which these proceed. But the plans of education for any human being must certainly prove either false, or defective which do not include a consideration of the probable employment and destiny. A full education for any human being must take in all the training and knowledge necessary to set him fully equipped upon his career. Our present question relates not to an ideally complete education for one, but to the common education of the many, and for the common duties of life.

NEW STUDIES PROPOSED.

What are the studies then that should be taught in our common schools? I limit this discussion to the common school studies, because in these schools the millions of our countrymen find all the school education they ever receive.

Let it be remembered that I do not propose to banish wholly any one of the seven common school studies. I have admitted that they have

developed a certain measure of utility which entitles them to remain, though in a somewhat changed form and in a much restricted amount.

I only desire to affirm, and with strong emphasis, that these seven studies ought not to hold the exclusive place they now occupy, and that our common schools must remain poor and unsatisfactory till the studies are changed.

But, asking the question wholly anew and with the best light of nineteenth century experience around us,

WHAT OUGHT TO BE TAUGHT IN OUR COMMON SCHOOLS?

I answer, the knowledge of ourselves, physical, mental and moral, and the knowledge of the world in which we live. These are the indispensable knowledges. These the child begins, of necessity, to study in the cradle, and of these he continues to learn more and more till his dying day. They lie at the bottom of our civilization, and are the basis of our arts, our institutions, our wealth, and our well-being. To know the bodies in which we live, their parts and functions, and the laws of healthful living; to understand the mental functions and moral duties on which soundness of mind and right conduct and character depend; to know much of the world, of animal and vegetable life around us, from which our food and raiment, the materials of our arts, and the comforts of our lives come to us; to know the physical features and forces of the world of matter—these are life studies ignorance of which means defeat and death, and the higher knowledge of which means advancing light, increasing power, mastery over ourselves and over our environment. Reading is to be studied as a means of studying these great central studies of man and nature; and all the other common branches are to be made useful and subordinate to these. In plainer words, there should be included among the studies of the people, in the people's schools, physiology, botany, chemistry, zoölogy, physics, geometry, technology, and the elements of political, moral, and social science; not necessarily as sciences, not with text books, not by set lessons and in scientific terms, but as knowledges, lying in nature and open to the eyes and hearts of children, should all these studies have place in the schools, as they have place and uses in life.

The very mention of these studies will be received by many with disapprobation and with the oft-repeated assertion "that children had better be made thorough in the studies already pursued, rather than scatter their time and strength over any additional studies."

IS IT THOROUGHNESS OR THOUGHT?

And just here we meet one of the great popular fallacies which have so long pervaded our schools and help to destroy their influence. The cry has been to be thorough. Teachers have admonished each other, and parents and school officers, leaders and lecturers, have urged thoroughness as the great condition of success in teaching; but it seems

to have escaped the observation of many that thoroughness can never be absolute on this earth; that in regard to education and knowledge thoroughness is a relative term. What would be thorough for a child of 5 would be superficial for a child of 10; and the thoroughness of knowledge required of the teacher of 20 or 30 years of age is practically unattainable by his pupil of 12 and 15. If, then, our children are to be forbidden all study of their bodies, or of the plants and animals with which they have daily to do, till they attain a thorough knowledge of grammar, geography, and arithmetic, then, whatever be the power of the teacher and whatever be the industry of the child, this demand amounts to a prohibition, absolute and impassable, against any advance beyond the old line and law of study and acquirement. It is not thoroughness in the sense of completeness that is needed, and which is probably meant by this popular cry, but clearness of understanding. Let the child know clearly what he knows. Let it be true knowledge as far as it goes, not vague, half knowledge; so we all say.

SCIENCES NOT IN A STRING.

But another popular fallacy lies at the bottom of this demand for thoroughness. It is the supposition that the several sciences constitute a succession of studies varying in degree of difficulty, some of which are adapted to childhood, others to the middle age of youth, while others can be mastered only by the mature mind. Hence it is concluded that one study should be completed by the child before even the elements of other and higher studies are attacked. Nothing could be further from the truth in point of fact. All science begins with simple facts, facts so simple that little children learn them, and all the sciences advance through successive grades and forms of truth till they reach the philosophical stage. Like so many Jacob's ladders, they have their feet in the dust, and their first rounds are so low that the creeping child may reach them. Their sublime summits are lost in the heavens, where only the strongest can soar and the steadiest can stay.

THE CHILD BEGINS THE STUDY OF ALL SCIENCES.

Every child of sound mind and ordinary opportunities will be found, on examination, to have acquired many elementary facts in every branch of human learning. He has begun the study of the whole cyclopædia of science. He distinguishes his ball from his blocks, and knows well enough the contrast between the sphere and the cube. This is the germ of geometry. He easily recognizes the difference between birds and bees or butterflies. He is beginning the study of both entomology and ornithology. He can practically distinguish soap from sugar, salt from vinegar; dreads the fire and delights in the sunshine; and all this is incipient chemistry. He chooses his playthings by colors, knows that unsupported they will fall and break in pieces; sees that force produces motion, and has learned a hundred other facts in physiol-

ogy, physics, and mechanics. He heeds his mother's voice, delights in her smiles, fears her frowns, and shapes his little plans with a cunning that tells that he has already mastered much of the science of mind and morals. Even in arithmetic, geography, and grammar—or rather in numbers, locality, and language—he has made a beginning in nature's own methods, in facts and practice. In short, all nature has been an open book to him; and from his birth he has studied its crowded pages with as much success as delight. Eager to learn, he observes, experiments, inquires, theorizes, tests his theories, compares, classifies, doubts, objects, seeks proofs, learns truths, infers consequences, is full of eagerness to know and name things. His education is going forward without any vacation, till in our foolish anxiety to make him learned in books, and especially in the common branches, we stop his education and send him to school.

THE SAD MISTAKE.

We stop his education, for we have come to believe that until he has acquired his alphabet, learned his a b abs, and spelled his way to reading, he cannot properly begin study. To learn in the proper way he must have a text book. We forget that the volume of nature is God's text book, written in the child's vernacular, the beautiful language of living facts and visible forms. During all this period of his book learning we foolishly count it a mark of idleness for our pupil to chase butterflies, pick flowers, or busy himself with anything else but the primer with which men have supplanted nature's great text book.

Pestalozzi and Fröbel and all the great thinkers and writers on education have protested against this substitution of book study for the study of nature. Rousseau would not allow his ideal pupil Émile to begin book study till fourteen or fifteen years of age, and the Germans require the child to be taught orally from six months to two years before being set to learn to read.

THE BETTER WAY.

If in place of seeking to force the pupil through all the stages of some one study, from its simple primer facts to its high philosophy, we should follow the course of nature, we should teach in the primer or primary grade the primer or primary elements of all knowledge.

As the child advances in each and grows in strength and understanding, we should add successive facts and truths in all these sciences, taking care to emphasize only such as may be of more utility.

When the advancing years require us to fit the child for its chosen pursuits and the widening fields of knowledge compel some selection to be made, then we should choose those studies, and those alone, which promise to have some bearing upon daily duties and the chosen destiny of the pupil.

It is not forgotten that knowledge is fading in character, and that all knowledge which is not made bright by practice and kept bright by use

will speedily pass from memory; and this will be equally true of all sciences of nature and of the common school studies. If the unused geography and arithmetic are soon forgotten, so also will be the unused botany and chemistry. But so, too, skill and strength, the twin products of the much vaunted discipline, also fade and perish if not kept bright by use. Neither knowledge nor skill abides in full vigor if left to lie in idleness.

But which knowledge will be most likely to be kept bright by frequent recall, the common school branches or that which concerns the ever present scenes and powers of nature? Will it be the geography of Asia, Africa, and Europe, or the botany of our door-yards and gardens which will be called into daily use? And what mental judgments will be most frequently repeated in daily life, those of the higher arithmetic and grammar or those which concern our physical condition and the phenomena of life and nature around us?

THE GERMAN SCHOOLS.

Now, lest all of this advocacy of another course of studies for our common schools shall seem unsupported speculation, let us turn for a moment to the common schools of another people among whom the branches of study were selected by wise leaders and under a set of conditions different from those which influenced our own. The German common schools, dating from Luther, may claim to be the oldest in Europe or America. The German and American school systems grew up entirely independent of each other and without communication between their founders. They may be looked upon, therefore, as two distinct answers to the same problem.

The study plan of the German common school, as reported by Dr. Stowe, embraces the following branches: For the youngest pupils, from 6 to 8 years old, (1) oral teaching in the exercise of the powers of observation and experience, including religious instruction and the singing of hymns; (2) elements of reading (after the oral teaching has gone on for six months); (3) writing; (4) elements of numbers.

For the more advanced pupils, 10 to 12 years old, the study plan includes (1) exercises in reading and elocution; (2) exercises in ornamental writing; (3) religious instruction, Bible history; (4) the German language, with grammar and parsing; (5) "real" instruction, or knowledge of nature and the external world, including the first elements of the sciences and the arts of life, geography, and history; (6) arithmetic; (7) geometry, doctrine of magnitude and measure; (8) singing. In the next grade, 12 to 14 years old, there were added to the foregoing (9) knowledge of the world and of mankind, including civil society, agriculture, and the mechanic arts; and (10) elements of drawing. Such are the common school studies of the German states.

My own later observation confirms the statements of Dr. Stowe, with slight modifications. In a visit to the German schools in Saxony, in

1879, I found the study plan included ten branches, and the teaching had the same prevalence of oral and practical work. As Horace Mann said, "The German teachers have found out that each child has five senses, and they teach the senses."

CONCLUSION.

While I hold fast, sternly and steadily, to the main purpose of this paper, to assert the mistake and wrong of the seven common school studies in their common method and measure, as found in the district schools, and to affirm, on the experience of a hundred years and on the credit of many of the ablest educators of this country, the utter impossibility of the attainment of any high and uniform success in our common schools with these seven studies alone, it would be as unjust as it would be untruthful to deny the immense value of the work done by these schools, in spite of the disadvantages of their bad choice of studies. Aided and supplemented by district and Sunday school libraries, by cheap books, by the most extensive, if not also the ablest, newspaper press of the world, by a vigorous and instructive pulpit, by a political system full of popular inspirations and incitements, by a splendid system of colleges, seminaries, and high schools, and by the almost universal tuition of that noblest of all schools, the school of labor, our school system has helped to train up a people second to no other in public and private intelligence, in vigor of practical understanding, in bold and far reaching enterprise, in high conceptions of human rights and duties, and in all the qualities of a vigorous, free, and advancing manhood. All the other agencies of public good would have been inoperative and useless without the ministry of the common schools. They have been the one mighty gear-wheel which has linked the people to all other machinery of moral, intellectual, industrial, and political elevation. If they have disappointed and are still disappointing the reasonable demands and expectations of their wisest and most earnest friends (I care little for the commonly senseless strictures of their few enemies), no one can deny that they have proved the best investment of public and private funds that our land has ever known, and that they are indispensable to the continued existence and prosperity of our Government. It is this indispensableness of these schools which pleads most loudly for the reform of studies which shall put them in completer harmony with the nature and needs of the childhood they instruct and with that great on-going, eternal, and resistless march of nature and history for which they must fit and train their young recruits.

Dr. ORR, of Georgia, submitted the following resolution; which was seconded by Mr. NORTHROP, of Connecticut:

Whereas the National Bureau of Education was established to assist in collecting and to digest and distribute information in aid of the common schools and other institutions and agencies of education; and

Whereas it is believed that a moderate increase of clerical force and of the appro-

priation for collecting statistics is necessary to meet the increased demands on the Bureau, and that its Commissioner should rank as to salary as an equal of the Commissioner of Agriculture or the Commissioner of Indian Affairs: Therefore,

Resolved, That a committee consisting of five members be appointed by this department, whose duty it shall be to inquire into the needs of the Bureau of Education touching these matters, and make such representations and recommendations to Congress, or to the appropriate committees of Congress, as it shall deem important and necessary.

Remarks in favor of the resolution were made by Dr. Orr, of Georgia; Mr. Northrop, of Connecticut; Professor Hall, of Cambridge, and Mr. Shepherd, of Baltimore. The last gentleman proceeded to remark unfavorably upon the paper which had been read by Dr. Gregory and regretted that there was not time to discuss the views presented. Remarks were made by Mr. Smart, Mr. De Wolf, Mr. Richards, and Mr. Shepherd; and Dr. Orr's resolution was then passed unanimously.

The committee of five appointed by the chair consisted of Dr. Orr, chairman, with Messrs. Marble, Smart, Gove, and Newell. To these Messrs. Philbrick, Armstrong, and Scarborough were afterwards added.

General EATON invited the members of the department to visit the Bureau of Education during the evening.

On motion of Mr. DE WOLF, the meeting then adjourned to meet at 2.30 P. M., in order to have a discussion of Dr. Gregory's paper.

The members of the department then proceeded to the Executive Mansion and paid their respects to President Arthur, being introduced by the Commissioner of Education.

FOURTH SESSION—THURSDAY AFTERNOON.

WASHINGTON, *March 23, 1882.*

Mr. Sheldon was chosen to occupy the chair until the arrival of the president pro tempore.

Discussion of the paper of the morning being in order, Dr. GREGORY said that he was surprised that his remarks had given offence; that they merely gave a résumé of some of the most important errors as to studies pursued in the schools; and although he had presented the matter in a different dress it was by no means new, nor did it differ from the ideas expressed commonly in articles published in educational journals.

Mr. DE WOLF indorsed the paper read by Dr. Gregory.

Mr. SHEPHERD had no doubt that the goal in the mind of all present was the same. The most practical education is that which fits men best for all the conditions of life. Are we not the wonder and admiration of the civilized nations of the earth for the character of our development? And yet it is said in the face of all this that the schools are not practical! He concluded by speaking of the great value of the study of the English language.

Mr. BLODGETT, of Illinois, supported the paper which had been read.

Mrs. POLLOCK, of Washington, spoke in favor of the introduction of the Kindergarten.

Mr. BLODGETT thought that the department should pass some resolution regarding the service to education rendered by Mr. Henkle. Mr. GOVE, of Colorado, wished the recent death of Mr. White to be similarly noticed. Thereupon General EATON moved that a committee consisting of Messrs. De Wolf, Blodgett, and Gove draw up suitable resolutions in regard to the death of these prominent educators; which was adopted.

The following paper was received from W. T. HARRIS, LL. D., and on motion of Mr. MARBLE it was accepted as a part of these proceedings.

HOW TO IMPROVE THE QUALIFICATIONS OF TEACHERS.

The superintendent of schools finds it his most important duty to create and foster an enlightened public opinion in regard to the province and functions of the system of education under his charge.

Where the people furnish the material means to support the school and choose teachers and superintendents to direct and manage it, public opinion marks out the limit of development, for the teachers and superintendent must represent the will of the people. They cannot successfully establish measures not approved by the community.

On the other hand, if the ideal standard of education is high in any community, means will be found and representatives chosen to realize that ideal.

On the conviction of the people, therefore, the perfection of the school system depends, and no structure has any stability if its educational results are too complicated or too subtle for popular recognition.

From this we deduce our statement regarding the most important duty of the superintendent. The superintendent is a specialist in matters of education. The community has chosen him and set him over a special department, namely, the direction of its schools. He has the best opportunity to learn what the school ought to do for the children of the people, and he can discover the best measures for its accomplishment. Having, as a specialist, to form an ideal of excellence in his department, he has a twofold duty remaining to perform: he must realize this ideal in the administration of the details of his system and he must educate popular opinion in his community to appreciate and support that ideal.

The superintendent cannot consider too carefully the last item of his list of duties. He must make his educational ideal valid in and through the conviction of the people, and never allow himself to suppose that he has discharged his duties when he has discovered the educational needs of the people and organized the details of an efficient system to supply those needs.

It is unfortunate for the cause of education that so many excellent superintendents have neglected this third duty, and have even rejected its requirements as unworthy of attention from men with a high sense of honor. They have seen the political demagogue and his base flattery

of the passions of the multitude, corrupting them for the sake of perpetuating his own selfish power. Any appeal to the people, any means used to influence the people directly, seems to be objectionable on the score of demagoguery.

Holding this view, our able superintendent devotes himself to discovering educational wants and perfecting his work of instruction and discipline, and he haughtily demands the support of the community and expects their confidence as a matter of right and justice due to himself. If the people take a different view and are dissatisfied with his exercise of power, and in the end overturn his establishment, he assumes the air of a martyr and finds his consolation in enumerating the petty circumstances of his persecution by low minded enemies while he was pursuing the strict and narrow path of duty. The people who removed him simply call him unpractical, and relate a few instances of his stubbornness in carrying out his abstract regulations where they conflicted with the customs and usages of the community. He insisted on applying his abstract rule of industry for all the children, in cases where study at home ruined the eyesight of Mr. A's son, or regularity and punctuality were insisted on so strenuously that Mr. B's daughters would go to school when not fully recovered from a fever, and the consequence is the death of one of them; or, in order to preserve the furniture of the new school-house from the wear incident to use by children not seated for study as in regular school hours, a regulation requires all pupils to remain in the open air until the bell rings at five minutes before nine o'clock, when all must form lines in the school yard and march into the building in military order. This being rigidly adhered to, a very inclement morning has caused much suffering and some cases of severe illness.

These are serious evidence of impracticability, "of a lack of common sense," as the people will tell you. But even when the teacher or superintendent is very discreet in all matters of administration of the schools, if the parents feel themselves treated without respect and due consideration they will misinterpret the teacher's motives in a multitude of instances and accept an unfair account of much that he has done, and thus come to view him as lacking disinterested regard for duty or else as lacking common sense. "Common sense" differs from the other kind of sense in taking into consideration all the circumstances of the thing, all that has interest in *common* with the thing; while the lack of common sense shows itself in the tendency to view its own subject of interest out of its proper relations to the rest of the world; it gets so close to its object that it is exaggerated by the perspective, and the great world is hidden from view by the mole hill in the foreground.

The educator who lays all this stress on his first and second duties and neglects the third one is like the architect who draws an excellent plan on paper and then builds a beautiful structure with hewn stone and the best of mortar, but who has neglected the preparation of a proper foundation. After a short time cracks begin to appear in the walls,

the structure becomes dangerous and must be pulled down. In order to complete our comparison we must imagine our architect extolling the merits of his plans and the convenience of his building for human uses; it was a thoroughly rational contrivance to shelter man from the elements and give him light, heat, and ventilation, and room for all his needs. What a calamity, therefore, that it must now be pulled down. That he should not recognize the necessity of planning and building with reference to the foundation as well as with reference to the human uses for which the building is erected, would totally unfit him for the business of architect and builder. But there are many educators who cannot see that the superintendent should look constantly to this foundation of the institution under his charge, and build all his improvements on the foundation of the convictions of the people, and take care to buttress all the walls upon distinct and explicit recognition on the part of both parents and pupils. In our country and time no system of managing any institution will achieve a permanent success unless it is based upon and interprets correctly the instincts and convictions of the people and unless it is made to *seem* to the people what it is in reality. "Three things govern the world," says Goethe: "love, wisdom, and appearance." Love is correct sentiment, wisdom is correct insight, appearance is the seeming of being; and, whether false or true, seeming will furnish the foundation for practical action. False appearance will lead to lame, impotent deeds; true appearance alone will furnish a basis for positive, rational deeds. Love and wisdom will not diffuse themselves for the blessing of mankind unless their mode and manner of appearance is looked after and unless the appearance of their recipients or objects is understood.

It seems strange, at first, that the wisest literary men of our century should lay so much stress on appearance (or mere seeming; the German word is *Schein*). But Goethe had looked into the political changes which announced their advent in our own Revolution and subsequently in the French revolution.

After the battle of Valmy, in which he saw with his own eyes the first defeat of allied monarchical power by insurgent French democracy, he said to the officers of the defeated German corps with whom he had approached the position of the enemy that morning: "Gentlemen, to-day you have beheld the beginning of a new epoch in the world's history." His thought was this: Henceforth it shall not be sufficient for the governing power to rule rationally and make up its accounts by its own standards. Henceforth in the history of this world it shall become more and more necessary to take into account the convictions and desires of even the lowest stratum of the people.

The lower the stratum of the people, the less power have they to penetrate the disguise of appearance and see the true reality. This makes it all the more necessary to see that the appearance of what is true and good is not mistaken by humanity and in its place the false and

evil adopted because it has put on the guise of the true and good and masquerades under its appearance. We must do right and also make it seem to be the right. He who educates the people to know the right by its appearance does as good a service to the world as he who merely discovers the right or who merely organizes it into an institution.

In discussing any topic relating to the duties of a superintendent of schools, therefore, it is necessary to keep in mind this threefold nature of his work. By its light we shall find the solution of many difficult problems that beset the administration of the affairs of education.

I have been led to make this general disquisition on the scope of the work of the director of educational interests because the question assigned to me for discussion before your honored association on this occasion is one that cannot be discussed profitably without a just appreciation of the third principle in the threefold duty of the superintendent.

I therefore announce as the general form of my answer to the question "How can we improve the qualifications of teachers?" bring them to feel by all legitimate means and influences the importance of making themselves strong in their community. They must teach well, and this includes good instruction and good discipline. They must conduct the school well, and this includes a proper reference of their work to the regulations of superintendents and school directors and the most important matter of educating the community at large into a critical knowledge of the quality of a good school.

At first thought the teacher would be supposed to have enough to do if he attended simply to matters of discipline and instruction. In order to reach and largely influence parents it would be thought necessary to visit the parents often, and that this would consume so much time and energy on the part of the teacher as to seriously weaken his fund of strength left for the work of instruction and discipline. But, in fact, it is not expected of the teacher that he shall make a system of visiting parents; such a course would be likely to diminish his influence. It is through the children themselves that the parents are best reached and influenced. The teacher who is careless of the opinion of parents and who feels no direct responsibility to them, governs his school in a very different manner from that of him who keeps the sense of the community constantly before him. Every teacher comes into relations with the parents of his pupils oftenest, as far as personal interviews go, through the failures of his pupils. Irregularity of attendance, want of punctuality, idleness, backwardness in scholarship, and improper behavior are occasions for consultation with the parent. The polite request of the teacher, made in a manner indicating interest in the pupil's welfare from the point of view which the parent ought to take and does take, will nearly always secure the prompt attention of the parent and his cordial coöperation. The coöperation of the parent removes most of the difficulty in managing pupils.

A comparatively small number of personal interviews suffices to estab-

lish the reputation of the teacher for good or bad among the parents of his district. One case of arbitrary exercise of authority or one case of ungoverned temper on the part of the teacher will be remembered by all who hear of it, and all will hear of it. Each parent takes to himself what is done to any one parent, just as each pupil trembles at the punishment inflicted on any one pupil, and perhaps the good pupils suffer more than the bad ones through imagining themselves to be in like circumstances with the culprit.

A sense of responsibility to the good opinion and moral support of the parents in the community makes itself felt on slight occasions, and soon gets recognized by all and gives rise to mutual confidence. The influence upon the pupil of a knowledge of a mutual respect between the teacher and his parents is exceedingly beneficial.

Whatever is done at school is reported at home, though not directly, by the children of each family. The parents form an opinion of the teacher through the fragmentary reports of their children, and that opinion reacts directly on the behavior of the pupils. The experienced teacher, who has long been in the habit of looking beyond his pupils to the families they represent, has learned how to mould opinion through the impressions he leaves on the minds of his pupils.

The superintendent can do no greater service for his teachers than to develop in them this habit of considering all their instruction and discipline as having a direct relation to the pupils, and through them to the parents, and again a still further reaction upon the pupils, which affects them permanently. The wise teacher will not waste his efforts in an impulse on his pupils that will be neutralized at once by the parents. He will find a way of educating the parents by a series of preparatory steps.

These matters of direct relation of the teacher towards parents are very important, but they depend more on the impulse of the teacher than on the efforts of the superintendent.

There are, however, many devices of school management entirely within the control of the superintendent which may be used for the improvement of the quality of teachers' work. I will mention, first, the suspension of pupils. This may happen for irregularity of attendance or for disobedience; suspension is not expulsion. The teacher should not exercise the power of expulsion. Suspension means simply that the pupil has in some way violated the rules of the school in a serious manner, and that the case is referred to the superintendent, who will restore the pupil upon the application of the parent. This brings about a meeting between the parent and superintendent, who must always be conciliatory toward the parent. It is the great mistake of some superintendents that they assume a browbeating air towards parents of pupils who have been suspended. If the parent is punished in that manner the pupil's cause has become the parent's cause, and the effect is lost on the pupil.

The parent must be free to complain to the superintendent in regard to the conduct of the teacher, but the superintendent will hold his own counsel. In this way sometimes the fact will be revealed that the parent has lost confidence in the justice or ability of the teacher. In that case the child cannot be expected to profit by the instruction he will receive in that school, but will be a source of insubordination and a destroyer of sympathetic relations between the teacher and other pupils. The superintendent will explain this condition of things and urge strongly the transfer of the pupil to some other school in the neighborhood. If the parent insists on retaining the pupil in the same school he will then see the necessity of correcting his alienation towards the teacher and will seek a personal interview. Under most circumstances transfer of the pupil to another school is the best course. Transferred pupils come among strangers both as to pupils and as to teachers, and they have the best of opportunities to begin a new career. The parent is also far more apt to frown on a repetition of an offence by his child in the new school. He now suspects that the original difficulty was the fault of his own child instead of the fault of the former teacher. The child gets no sympathy at home for his misbehavior and finds obedience the easiest course at school. But the recurrence of trouble at school on the part of the pupil after a case of suspension and restoration to the same school is more likely to be accounted for by the parent as a case of grudge on the part of the teacher.

It is a common practice in our cities to have rigid district lines separating one school from another. It is thought that pupils should never be transferred from one district to another. This habit of preserving strict lines costs a fearful price. The collisions between the teachers and the pupils and the parents ripen into feuds and continue to accumulate, with interest, from year to year, while by the plan of transfer they are neutralized at their inception and a strong attachment arises for each school on the part of its patrons.

There is no better preventive or remedy for the evil of irritability on the part of the teacher than this device of transfer in case of severe complaint on the part of parents. The teacher is made aware of the effects of his or her irritability, and at the same time of responsibility to the community. The peculiarity of the teacher's vocation—being obliged to deal with immature minds and especially with undeveloped wills subject to fits of caprice and irrationality—the very nature of the teacher's vocation tends to produce dogmatism and irritability. The superintendent must, therefore, organize all his means so as to counteract this tendency and so as to protect the teacher against the effects of his own vocation.

Of course it will be conceded that professional training in a good normal school is the best preparation for the new teacher. I have made repeated examinations of the comparative merits of normal school graduates and other teachers. The result has proved to be in favor of the

normal schools by almost 50 per cent. in quality of work. The criterion has been the estimate reported by the principal of the school and confirmed by the superintendent. Promotion for merit has been doubly in favor of the normal graduates. The average teacher stops growing within a short period after achieving fair success, three to five years being the ordinary limit fixed. The teacher educated at a normal school is more likely to continue growing throughout the entire career.

The best device for the initiation of new teachers, whether from the normal school or elsewhere, is what is known in cities as "substituting." The new teacher is sent to fill temporary vacancies as they occur. If a partial failure is made and demoralization takes place on the part of the pupils, the evil is soon remedied by the return of the regular teacher. Meanwhile the teacher goes to fill some other vacancy with a store of valuable experience acquired. It is very difficult for a young teacher to recover control of a school room after it has been lost by the mistakes of inexperience. The plan of sending out such inexperienced teachers as substitutes not only makes them successful in a far less time, but it positively saves many from complete discouragement and ultimate failure. I have known many teachers of long experience, but wretched failures after all this experience, who have become good teachers after being employed a few weeks as substitutes. This practice of sending substitutes to fill vacancies is made more effective in improving the qualifications of teachers by the organization of schools in groups and placing them under supervisory principals. The supervisory principal can manage a system with twenty to thirty subordinate teachers. His work differs from the superintendent's in the fact that he is required to hear at least two regular recitations daily, a circumstance which keeps his supervision at the point of view of the teacher and makes it to differ widely from the supervision of the superintendent.

The links of supervision when developed fully in a large city are three in number and very different in kind. The general superintendent is best qualified to detect one-sided tendencies in instruction and discipline and to take note of the trend of public opinion, give advice to the school board, &c.

The assistant superintendents study details of management more closely and give more stimulus to the application of special methods and the correction of defects in practice. The supervising principal can give daily support to a teacher that is failing in discipline or instruction, and can conduct classes in the presence of the teacher and demonstrate the best methods of instruction, as well as prevent too harsh discipline by having the flagrant cases sent up to him for correction. These flagrant cases he can usually reform by keeping a record of them and having the same pupil bring up a daily record of his behavior from his teacher until he succeeds in attaining a perfect record for several days in succession.

There is still another very important means of improving the quality

of instruction, by introducing into the course of study a certain amount of work to be done orally. The pupil is to have no text book and to have no previous preparation. The teacher must make elaborate preparation and furnish the pupil information, and at the same time, by conversation, connect this new material with related objects that have already come into the child's experience. The oral lessons should not be given on work that the child can already master by his own study, such as the disciplinary studies, reading, arithmetic, geography, and grammar; but they should relate to the sciences of nature and to civil history, nature, and man. Inasmuch as the preparation by the teacher must be elaborate, there should be not more than two of these oral lessons a week. It has been a great mistake to bring in these oral lessons every day. The teacher has been unable to meet the strain on her energies and has been obliged to come to the lessons unprepared. With one long lesson a week in natural science and one in history, the teacher makes weekly preparation and gradually becomes well informed in all departments of natural science and civil history. A teacher continually growing in knowledge of the world will continually improve as a teacher.

This oral work stands in sharp contrast to the regular text book work. Its results, however, continue to reappear in the greater interest which the teacher infuses into the recitation from the text book. Her ability to cross-question and to bring out into clearness all phases of the subject continues to develop. There is and must be a periodical recurrence of a demand on the part of the public for this introduction of lessons in natural science and history into the course of study. These are information studies, contrasted with reading, writing, arithmetic, grammar, and geography as discipline studies, and their methods should be very different. Then they will be mutually helpful. All text book instruction tends to degenerate into parrot-like repetition of words without investigation of the meaning. All oral instruction tends to degenerate into a pouring-in process for the pupil, giving him amusement and saving the hard work for the teacher alone. The school should not give up its information studies because the people cease to clamor for them, nor introduce them at the expense of discipline studies when extremists demand it. The superintendents must be conservative in action and conservative likewise in reaction. For my closing sentence, I return to my main thesis: they must chiefly exert their influence to make the teacher strong in the community.

Messrs. SMART and HOUCK followed in discussion; and Mr. RICHARDS, of Washington, said that the essential in schools is not method but matter; that nine-tenths of the time of the children is spent in memorizing that which never results in anything.

Mr. NORTHROP spoke in favor of the schools of the rural districts, and said that in nine cases out of ten country boys will succeed best.

Mr. SHELDON remembered that Dr. Gregory made an address which

he heard in Michigan twenty-five years ago on practical education, and he discussed the paper under consideration at some length.

Mr. FLETCHER, of Maine, and Mr. NORTHROP made pertinent remarks.

Mr. BLODGETT reported the following resolutions; which were adopted:

Resolved, That in the death of W. D. Henkle, one of the founders of this association, it has lost one of its most earnest and constant laborers, and the cause of education will miss his earnest advocacy of sound and comprehensive methods with his voice and with his pen.

Resolved, That in the recent death of S. H. White, long the efficient principal of the Peoria Normal School and an earnest promoter of the interests of this association, we have lost a fellow-worker whose zeal was untiring, whose judgment was sound, whose friendship was warm and true. He has left valuable contributions in the important field of educational journalism.

The Department then adjourned sine die.

APPENDIX.

REPORT OF THE COMMISSION ON SCHOOL BUILDINGS IN THE DISTRICT OF COLUMBIA.

WASHINGTON, D. C., *March 15, 1882.*

The commission appointed by the resolution of the House of Representatives, dated February 20, 1882, * * * for the purpose of investigating the public school buildings of the District of Columbia, &c., has the honor to submit the following report:

Having duly organized, the commission addressed letters of inquiry to the Commissioners of the District, the board of trustees of the public schools, the superintendents of the public schools, and the health officer of the District, referring to the resolution and requesting information bearing on the matters referred to therein. All of these communications received prompt replies, and the commission takes great pleasure in acknowledging the uniform courtesy with which it has been treated by all parties concerned in the inquiry, and their evident desire to furnish all the information possible relating to its object.

The brief space of time allowed for the preparation of this report has not permitted of so complete an investigation into the character of the buildings, &c., as would have been desirable; and by reason of pressure of other official duties the members of the commission have been unable to devote as much of their time to personal examination of the various schools as they would have wished. Nevertheless, they have been able to visit in person a number of the schools, including specimens of the best and of the worst of both the owned and the rented buildings.

They have also been fortunate in obtaining through the courtesy of the National Board of Health the assistance of Dr. Charles Smart, United States Army, who has made for them a number of examinations of ventilation, including careful air analyses, in buildings selected for that purpose as types. Mr. F. H. Cobb, an engineer of the Capitol grounds, has, at the request of the commission, made a careful examination of all the rented buildings in Washington and Georgetown, with reference to their capacity, sanitary condition, security from fire, amount of rent paid, &c., and this information, together with that furnished by Dr. Smart, and some of the results of the personal observations of the commission, are embodied in a report upon each school building owned or rented.

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After having carefully considered the data, * * * and after an examination of the plans of the various buildings furnished from the office of the inspector of buildings for the District, and after having had personal conferences with the Commissioners of the District, the inspector of buildings, the building committee of the board of trustees, and the superintendents of public schools, the commission have come to the following conclusions:

I. The amount appropriated for the construction of new buildings in the District during the last three years has not been sufficient to do

more than meet the demand for accommodation due to the annual increase of pupils during the same time. This will appear from the following table, which shows the annual increase in attendance of pupils in the public schools during the last six years:

Year.	Average enrolment.	Increase.
1875	14,417	.....
1876	15,646	1,229
1877	17,112	1,466
1878	18,959	1,847
1879	20,389	1,430
1880	21,600	1,211
1881	22,061	461
Total increase for six years		7,644
Average annual increase for six years		1,274

The amount of additional accommodation provided during the last three years by the erection of new buildings has been about 1,320 pupils annually. It is believed that this statement sufficiently accounts for the fact that there has been little or no diminution in the number of rented buildings, notwithstanding the number of new buildings which have been constructed.

The following table shows the total number of school-rooms owned and rented in the District at the present time, which gives an average of 55 pupils per room:

	White.	Colored.	Total.
Owned	180	109	289
Rented	84	25	109
Total	264	134	398

The large school buildings that have been erected in the District during the last three years have received careful examination. The general plan of all these buildings is considered fairly satisfactory, and they are superior to some and equal to the average of school buildings in other large cities of this country. They have been as cheaply built as is consistent with the purpose for which they were designed, no money having been used for architectural effect or ornament of any kind. They include the Peabody, Henry, and Force school buildings and the one at the corner of Tenth and U streets. The plans of the Peabody and Henry buildings were selected by prize competition.

The principal defect, from a sanitary point of view, in all these buildings is in regard to the fresh air supply, which is entirely insufficient. The method adopted for this purpose is to admit the air through a perforated plate placed beneath the sills of four windows in each room. Having passed through this plate the air is supposed to pass downwards through a narrow slit in or behind the wall, and to enter the room at a level with the floor, and then pass up through a steam radiator which is placed against the window. The sum of the area of the clear opening in the external plate of each window is from 22 to 25 square inches, so that the area of clear opening for the supply of pure air to the room is

from 88 to 100 square inches, giving an average of about two-thirds of one square foot. When it is remembered that this is intended to supply fresh air for 60 children, each of whom should have as a minimum 30 cubic feet of air per minute, it will be seen that it is simply impossible to obtain such a supply through the openings provided, which in fact will hardly furnish 5 cubic feet per minute per pupil. In most of the rooms at the time of the examination these fresh air openings were found to be entirely closed and even when open, in a majority of cases, very little air was entering through them. It would appear that they are kept closed in part to prevent the freezing of the condensed water in the radiators and in part to avoid draughts upon the children sitting near them. The greatest part of the supply of air for the school rooms in cold weather comes directly through the brick and plaster walls of the rooms, especially on the windward side of the building, and from the large central halls, the doors and transoms into which from the several rooms are usually kept open. Examinations showed that in most cases a strong current inwards existed in the lower part of the open doorways.

In the Tenth and U streets building the foul air flues in the external walls are so arranged that at times the two large aspirating ducts on the opposite wall pull against them to such an effect that there is a down draught through the external foul air flues into the room. The large central aspirating shafts in these four buildings appear in the main to work well. Each school-room has, opening into these shafts, registers, one-half near the ceiling and the other near the floor, amounting in all to four square feet of clear opening. The velocity of air at these openings was found to vary from 80 to 200 feet per minute. The maximum would give 800 feet per minute removed as the work of these shafts. The amount which should be removed from the room to give 30 cubic feet of air per minute to each child would be 1,800 cubic feet per minute, or more than double the work actually effected by the aspirating shafts. The heating apparatus in these buildings is altogether insufficient to heat during cold weather the amount of air supply which should be furnished. To effect this, both the amount of radiating surface and the size of the supply pipes would need to be largely increased.

There is no provision in any buildings for diminishing the temperature of the incoming air without totally cutting off the supply of heat, and when the rooms become overheated, as appears to be not unfrequently the case, the only method of cooling is to shut off the heat and open the windows, thus creating draughts. In the Peabody and Henry buildings, the building on the corner of Tenth and U streets, and in the Curtis building, a simple bell trap in the floor of the basement is the only protection against the entrance of sewer gas into the buildings. These bell traps are entirely unreliable for this purpose, and as a matter of fact in the Henry and Curtis buildings, and also to a slight extent in the Peabody building, the gases from the sewers were found to be passing through this trap into the basement. As the air of these basements communicates freely with the upper part of the building, and forms, as has been pointed out above, one of the main sources of supply for the school rooms, the great danger from this source can be readily understood.

II. Very few of the rented buildings have any special provision for ventilation. The great majority of them are heated by cast iron stoves standing in the room, and have no special arrangements for either fresh air supply or the removal of foul air. It is believed that in the majority

of these buildings great improvement in the ventilation might be effected by simple means and at comparatively small expense by employing ventilating stoves, which shall warm the fresh air to be admitted, and by the insertion, at suitable points, of flues for the escape of foul air.

As regards the rents of these buildings, the commission would refer to the recommendation of Mr. Cobb and of the inspector of buildings.

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It must be remembered, however, first, that the assessed value is considerably beneath the actual value, and, second, that while the rent paid for some of the buildings is undoubtedly exorbitant, it is probable that these are the only buildings in the vicinity which can be procured for the purpose.

The locations for new buildings to be erected should be selected with a view to diminishing the amount paid for rental as much as possible.

III. In view of the fact that the construction of these buildings is so far advanced toward completion, and after an examination of their plans and of the work so far as completed, the only suggestions which it appears to be necessary to make at this time with regard to them are: (1) That in view of the recent burning of the Jefferson school building, and that it is alleged that this was due to the fact that the horizontal ventilating flues were combustible, it is advised that all the ventilating flues in the new buildings should be made fireproof. (2) That care should be taken by means of properly adjusted valves to secure a free supply of fresh air at all times, whether the heating apparatus be in operation or not, and also the possibility of so mixing cold with the warm fresh air as to secure the admission of a free supply of air at any temperature desired. The system of heating and ventilation by means of indirect radiation in these buildings is, in the opinion of the commission, the only one which will give satisfactory results in large buildings of this class.

Into the details of the sizes of flues, &c., to secure the necessary amount of air supply and removal, the commission has not had time to enter.

IV. The commission is of the opinion that the control of and responsibility for the erection, repairs, and care of public school buildings and property pertaining thereto should be vested in the school board by the Commissioners of the District. It is advised, however, that no new building should be erected, or any important alterations in existing buildings made, until the plans and sites selected for such new buildings, or the proposed alterations, shall have been approved by a board of experts representing the best and most recent knowledge in sanitary science, in pedagogy, and in architecture. In view of the fact that one-half of the expense of these schools is borne by the General Government it seems only proper that it should, through its own officers, exercise the controlling power of approval with regard to the erection of new buildings or important changes in those already existing. Such an important matter as the arrangement of a large school building should not be left to the discretion of a body of men who have no special familiarity with the approved principles of school management, sanitary science, or architecture.

The simplest and most satisfactory way of obtaining such a board of experts would be to have them appointed by the President, who would probably have no difficulty in selecting suitable persons from among the various officers in the different departments of the government who are on duty in Washington.

V. It is the opinion of the commission that the amounts heretofore

allowed for repairs in the school buildings have been economically used, but that they have been insufficient to meet the current wants. The commission find, however, that under the present system there is no possibility of ascertaining what each individual building has cost in the way of repairs, and it is considered that this is a defect which should be remedied. An account should be kept with each building, not only for its original cost of construction, but for the subsequent cost of repairs, heating, lighting, &c., for purposes of comparison, and to ascertain the relative merits of different plans of construction, &c.

VI. In all buildings which have water closets within the buildings it is desirable that the present plumbing regulations of the District of Columbia should be enforced, and this should apply not only to those in process of construction or hereafter to be erected, but also to those already occupied. It is the opinion of the commission that every school building in the District should be carefully inspected at least once a year with reference to its ventilation, plumbing, and general sanitary condition, by an officer of the health department, and the result of such inspection be reported to the board of trustees of public schools through the Commissioners of the District.

VII. Only a portion of the buildings owned by the District, and none of the rented buildings, are fireproof. As regards the majority of the rented buildings, however, the danger in this respect is comparatively small, since they are only one or two stories in height, and the stories are so low that, in case of fire, escape could probably be readily effected by the windows.

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VIII. The commission has carefully considered the existing wants of the District for additional school accommodation.

Looking at this side of the question only, it would appear that there is at the present time great demand for additional school buildings. On the other hand, the commission fully recognize the fact that there are great and urgent demands upon the revenue of the District for other purposes, and more especially for drainage, sewerage, and for putting the streets into a proper condition, and also that the rate of taxation upon the property owners in the District should not be materially if at all increased. It is because this last point has been kept in view that the commission has refrained from commenting in detail upon the defects which are found in the existing school buildings, even in the best, or from urging the erection of such buildings as would be considered, in the light of the combined requirements of modern sanitary and pedagogical science, as model schools, since to secure the amount of light and fresh air which should be furnished in such a building necessitates not only a certain increase in cost of construction over that which has been heretofore expended upon school buildings in the District, but also additional cost for their maintenance, more especially as regards heating, since in cold weather the fresh air to be supplied must be warmed, and if the proper amount is supplied the cost for fuel must be increased to correspond. Taking all these things into consideration, it is the opinion of the commission that for the next three or four years at least the sum of \$100,000 per annum should be expended in the construction of new buildings upon plans to be approved by a board of experts, as above suggested, and that, setting all other considerations aside, it will be much more economical to make this expenditure than to pay the rents of the structures which these new buildings would replace.

In the plans of buildings to be hereafter erected, the commission consider that the following points should be insisted on, concurring

with regard to them with the report of a special committee of award upon plans for public schools, as reported in the Sanitary Engineer for March 1, 1880, with certain modifications relating more especially to the conditions in the District:

1. All sides of the building shall be freely exposed to light and air, for which purpose they shall be not less than sixty feet distant from any opposite building.

2. Not more than three of the floors, better only two, shall be occupied for classrooms.

3. In each classroom not less than 15 square feet of floor area shall be allotted to each pupil.

4. In each classroom the window space should not be less than one-fourth of the floor space, and the distance of the desk most remote from the window should not be more than one and one-half times the height of the top of the window from the floor.

5. The height of the classroom should never exceed fourteen feet.

6. The provisions for ventilation should be such as to provide for each person in a classroom not less than thirty cubic feet of fresh air per minute, which amount must be introduced and thoroughly distributed without creating unpleasant draughts or causing any two parts of the room to differ in temperature more than 2° Fahrenheit, or the maximum temperature to exceed 70° Fahrenheit. The velocity of the incoming air should not exceed 2 feet per second at any point where it is liable to strike on the person.

7. The heating of the fresh air should be effected by indirect radiation.

8. All closets for containing clothing and wraps should be thoroughly ventilated.

9. Water closet accommodation for the pupils should be provided on each floor.

10. The building should not occupy more than half the lot.

All of which is respectfully submitted.

JOHN S. BILLINGS,
Surgeon, United States Army.

JOHN EATON,
United States Commissioner of Education.

EDWARD CLARK,
Architect United States Capitol.



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